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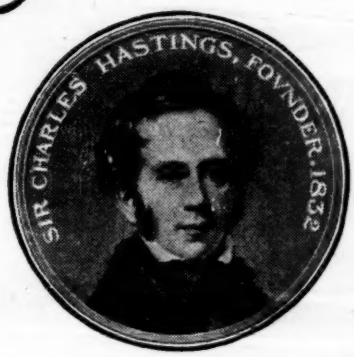

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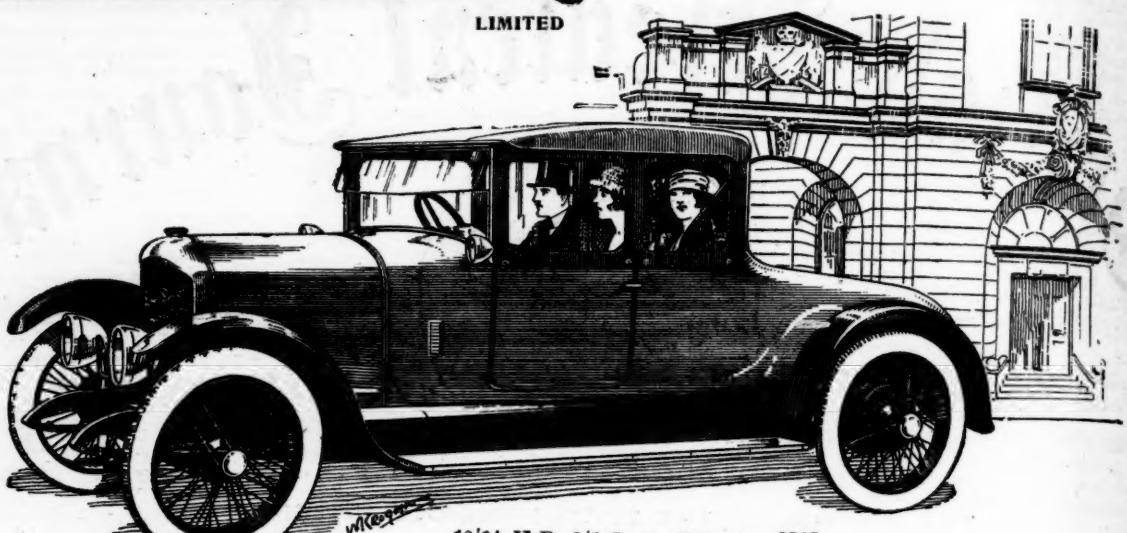

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PERMEATION OF THE MEDICAL CURRICULUM BY PREVENTIVE TEACHING.

BY

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A NEW epoch opens this year before the students of medicine. In 1922 the medical curriculum in Great Britain was completely revised and reconstructed in such a way as to make it more preventive in purpose. The changes introduced had, of course, other collateral objects, but this was one of the special aims, and it was sealed by a resolution of the General Medical Council "that throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspects of Medicine."

The medical schools are devising, or have already made, arrangements to carry out the new recommendations of the Council. These arrangements will no doubt be subject to the periodical visitation of the Council's inspectors. It is anticipated that examiners also will look for and require substantial evidence of the student's appreciation of the importance of dealing with disease in the "preventive" way, of not only knowing how to diagnose and cure immediate maladies, but of being in a position to advise the patient how to order his life in such a mode as to direct his personal and environmental tendencies towards health. It is a new outlook.

There were two fundamental reasons for this new attitude. First, it had come to be recognized that as compared with the twenty-three centuries since Hippocrates we are living in a Golden Age of Medicine, the chief glory of which has been the advance of prevention; and secondly, it is now generally acknowledged that the ultimate purpose of the science and art of medicine is not to cure the individual patient only, but to seek out the laws or principles which govern health or ill health for the human family. The nobility of the profession of medicine reaches its highest plane in compassion towards, and the relief of suffering of, the individual on the one hand, and, on the other, the finding and establishment of scientific truth which shall advance the evolution of man.

THE VICTORIES OF PREVENTIVE MEDICINE.

Let me name four recent examples of the victories of preventive medicine in its communal sphere, which will illustrate the methods to which we must have regard. We need go no further back than thirty years. In 1893 there were in England and Wales 6,801 deaths from *typhoid fever*, or 229 per million persons living; in 1903, this disease caused less than half that number of deaths (3,347 persons); in 1913 the death rate had fallen to 41 per million; and in 1922 it had come down to 12 per million, which meant only 443 deaths from a disease which formerly made an annual toll of eight or ten thousand lives. The case fatality remains about the same (15 to 20 per cent.) and the type of disease has not materially changed. *But the disease is disappearing.* Why? Because the public water supply is improved; because drainage, sewerage, and refuse disposal have been reformed, and the food supply, including shell fish, has been controlled. There is no mystery about it, nor any doubt. Inoculation is available, and has been used in exceptional circumstances, though not widely, in the civil community. Its value, in conjunction with general and special sanitation, in the European war, 1914-18, is unquestioned. In the South African war the British Army strength was 208,000; there were 58,000 cases of typhoid, and 8,000 men died of it. In the European war the British Army on the western front had a strength exceeding a million men, but there were less than 7,500 cases of typhoid and only 266 deaths. In the army or the civil community the result is the same: the disease is conquered.

A second example is small-pox. In London from 1660 to 1780 Farr estimated from the bills of mortality that small-pox caused upwards of 4,000 deaths per million living. In England and Wales in 1838-42 the rate was 575 and in 1886-90 it had fallen to 14 per million. Why? Because of vaccination. It has been proved beyond doubt that vaccination was the specific agent in this decline, the specific protection against this disease. The malady was all but a universal scourge, and it is now entirely controllable. The vaccination laws may or may not be wise, ineffective vaccine and inefficient vaccination may or may not occur, the protection afforded may not be of indefinite duration; but in all countries the experience has been the same—vaccination prevents small-pox. It is not a disease which is dying out like black death or leprosy. When reintroduced into an unvaccinated community it returns, whatever be the sanitation. We have control if we choose to exercise it, but because of prejudice or ignorance we have not yet reached the stage of stamping it out for ever.

Tuberculosis is a third example. In 1847 the death rate per million from phthisis in England and Wales was 3,189. It has steadily declined for seventy years and in 1921 it was 854. Non-pulmonary tuberculosis is likewise declining. If the disease be as widely distributed as is generally supposed, it must indeed be one of the most curable of the great scourges. What is the explanation of its decline? The answer is prevention. An improved milk supply, institutional treatment of the disease, better nutrition, sanitation of the home and the workplace, the reduction in the habit of promiscuous spitting, and an immense advance in social well-being are, in spite of voluble and inconstant

declarations to the contrary, steadily gaining ground over tuberculosis.

The last example I need cite is the prevention of a high infant mortality. At the end of the nineteenth century there died every year in England and Wales 150 infants per 1,000 born. In many industrial districts the figure was 300. In 1922 it had fallen for the whole country to 77. What has happened here? No doubt many factors have contributed, but the most potent have been more enlightened motherhood and infant nurture.

Now here we have four examples of the effect of preventive medicine applied to the community through the operations of the State or the municipality. They have effected a postponement of death and an enormous betterment of man's physical condition and capacity. But it was Medicine, medical science and medical art, which first determined the causes or conditions of these diseases, and then conceived the means of their prevention. Many and complex have been the factors at work, but in the four examples quoted (*a*) improved sanitary environment, (*b*) vaccine, (*c*) personal and social hygiene, and (*d*) enlightened motherhood, emerge as dominant.

Some Undefeated Enemies.

We must now take a further step in the argument, and ask ourselves if preventive medicine can be applied to other morbid conditions, which, though not national or racial scourges, do, in fact, prove themselves to be the most formidable enemies we have to face. What are they? There are two bodies of data immediately at hand. There were 486,780 deaths in 1922. The chief cause was respiratory disease (non-tuberculous), responsible for 18 per cent.; next came diseases of the heart and circulation, 16 per cent.; then nervous diseases and cancer, 10 per cent. each; then tuberculosis 9 per cent. So that 63 per cent. of the total number of deaths was due to five great groups of disease. What has preventive medicine to say to these? There is another body of data which illumines the situation—namely, the causes which take upwards of seven million patients to their insurance doctors every year. A survey was made in 1921 of 36,000 cases in 226 practices in 116 towns, and it was found that 22 per cent. went to the doctor with respiratory disease (mainly bronchitis), 13 per cent. with digestive disease, and 45 per cent. with influenza, anaemia, skin disease, minor injuries and accidents, septic conditions, lumbago and rheumatism, and debility. Thus we know approximately 80 per cent. of the early morbid conditions met with in average insurance practice. What has preventive medicine to say to this group? Clearly, it should have more to do with them than with the ultimate causes of death. But taking both groups together, with the exception of cancer, they constitute the chief current burden of preventable mortality, sickness, incapacity, and "lost time" from the industrial point of view. This is now the unconquered territory. Preventive medicine has proved itself efficacious in the realm of infection; it must turn its attention to this larger issue, for it possesses the potentiality to deal with it also.

The problem before us at the moment is not the action the State should take in regard to these diseases, nor even the work of the medical practitioner, essential as they both are. It is the narrower engagement, How can the medical curriculum be permeated with the spirit and methods of prevention? I think the answer is twofold. First, by the teachers of medicine conducting the studies of their pupils in the direction of prevention (*a*) by a special course in hygiene and preventive medicine, and (*b*) by addressing themselves to the preventive aspects of clinical work; secondly, by the student bending himself to preventive study.

A Course in Physiological Hygiene and Preventive Medicine.

The celebrated medical school in the University of Salerno possessed, as early as the twelfth century, a department of instruction in the basic subject of the Conservation of Health, and its sanitary precepts and principles have been handed down to us in the records and poems of the *Schola Salernitana*. Every British Medical School has had something of this kind. But we do not make enough of it. It calls rather urgently for reform and amplification, partly as a definite and prescribed course in hygiene, and partly by the introduction into physiology and the clinical subjects of the preventive view. There should be a living and comprehensive short course in hygiene—not "drains" and nuisances, but the vital principles and means of health and the widest understanding of the physical effect of his environment and habits on man. We make the student, by special courses, familiar with anatomy and physiology that he may have the normal in his mind, and on that we build up his conception of disease. Why not start all his clinical work on a similar basis by providing a course in *Hygiene* of the normal body in action, and the factors which affect it? Again, *Medicine* proper should always and invariably include instruction in the prevention of disease of the respiratory, alimentary, circulatory, and nervous systems. There is a cause for all these morbid conditions, and Pasteur urged that the cause should be continuously sought and explored. *Surgery* likewise includes, and in some ways embodies in its most graphic form, the means of prevention; the removal of enlarged tonsils and adenoids, the correction of deformities, antisepsis, much abdominal and thoracic surgery, gynaecology, dentistry, industrial surgery, surgical reconstruction and re-education are examples which leap to the eye, but there are many others. *Obstetrics* should place in the foreground (and not in the background) the whole question of pre-natal supervision, puerperal fever, the prevention of congenital syphilis, ophthalmia, and the care of the infant, as well as the improved management of labour. What is really the scientific use and educational value of sending an inexperienced student to attend the confinement of a woman, whom he has never seen before, and of whose physical history he knows nothing? Is it only that he may count the case in the necessary twenty he must attend?

Even more important than the spirit of prevention pervading all instruction is the whole attitude of the student to his clinical work. I want him to ask himself, every time: "*Why is this patient here?* What is the physical or social complex that has made his body depart from the normal? To what stresses and exhaustion has he been subjected? How did he *get* this thing that troubles him and me?" Certainly, it is not chance, caprice, or fate. It is our business and our science to worry out the causes, and discover the way to escape or remove them. If every student became thus an investigator and discoverer, the science and art of medicine would be saved from perfunctory workmanship, and from explanations which are no explanations, what Cullen used to call "the most absolute languor" leading to "exclusive attachment to one system." We ought to welcome light from any source, orthodox or heterodox, frequently question all our methods, and even receive cheerfully "the noise and bustling of Paracelsus." As Henry Ford of motor-car fame says, "Everything can always be done better than it is being done."

The Philosophy of Prevention.

The preventive attitude of the student cannot merely be left to opportunity. It must be provided for. In the first place, he should get a clear and fair "scratch line." He must know the physiological standard of health and capacity from which he starts. The preventive purpose of the course in anatomy and physiology is to teach him the range and capability of the human body, what Nature can and cannot do. "Our natures," said Hippocrates, "are the physicians of our diseases;" and, following him, in the Introduction of his *Medical Observations*, Thomas Sydenham, our grand exemplar in the seventeenth century, repeated the axiom: "Nature by herself determines diseases, and is of herself sufficient in all things against all of them." The study of biology, chemistry, and physics and the intermediate subjects, is to give an apprehension and standard of Nature which we may bring to the bedside. Without it we are lost, and prevention has no meaning. The natural history of disease is the crucial requirement. "When it is thoroughly grasped," says Sir Thomas Lewis, "that infection has more to do with heart failure than has strain or a mechanical defect in the heart itself

at all stages of the disease, in its initiation, in its development and in its progress, then and only then is the *natural history* of heart disease understood."

In the second place, the student must become really keen on the search for the etiology, the primary and secondary causes, of the morbid condition he is investigating. One frequently hears it said that the clinical student learns best by seeing a great number of cases, and that London with its immense population therefore affords fullest opportunity for clinical study. I am afraid I do not agree. Of course, the wider the experience the better; but it is not the superficial survey of many cases but the understanding investigation of a few which really educates the student. Comprehension and not repetition is the strength of memory; and it is obtained as the mind really explores and observes, and discovers for itself the causation of the condition. Nowadays we look for guidance (*a*) to bacteriology and pathology, (*b*) to clinical character and symptomatology, (*c*) to laboratory confirmation, and (*d*) to social factors. There is much new knowledge available, but 150 years ago at Edinburgh, William Cullen was proclaiming all the enduring principles, and his plan of studying each case has not been greatly improved upon by some modern prophets. Nevertheless, of course, he taught before the industrial revolution. The people had not swarmed into the towns (where four-fifths of them now live), the factory system was not dominant, industrial fatigue—a fertile source of physical and psychical impairment—was not appreciated, and the general stress and strain of modern life was less than now. Mr. G. M. Trevelyan tells us that the second half of the nineteenth century is "the story of the building up of the new world, of a wholly new type of society, infinitely more complicated and interdependent in its parts, more full of potentialities for progress or disaster, than anything the world has before seen," and this must be taken into account. Moreover, the growth of knowledge was awaiting Darwin, Pasteur, Lister, Ehrlich, and Einstein. Hence, the actual and relative *causes* of disease were not evident. But now every inquisitive student can search with hopefulness, and be, as Cromwell said, "happy seeker, happy finder."

Lastly, the student should habituate himself to think widely and resourcefully of the means of prevention in their whole range. Poverty, industry, personal habits, social conditions, channels of infection, must be considered as well as the grand category of the therapeutics which prevent—drugs, vaccines, serums, organic substances, sunlight, electricity, radium, massage, psychology—and the still wider factors of environment. He is to learn by ingenuity to apply and adapt all knowledge to the harnessing of disease as a whole. The patient is to be cured; yes, but out of the patient is to be wrought an understanding of, and an attack upon, and the prevention of, the particular disease from which he suffers. It may well be that the student cannot *practise* prevention as he learns to practise the cure, for the issues raised are beyond his immediate control. But when he enters upon his life's work as a medical practitioner he will find that it is required of him that he shall take an essential part in the vast national and international machinery now in being for the conquest of disease. There are not less than a score of Acts of Parliament which impose public preventive duties upon him as a medical practitioner. He must know how to comport himself in relation to those laws. But more than that, his private patient is concerned not only with the alleviation of his malady, he is anxious about the future and his capacity to work, and he asks, "What can I do to *prevent* this?" Surely, that is a very cogent and penetrating question for the medical practitioner to answer. His answer, and its wide promulgation and proper interpretation, is the fulfilment of his splendid part as the missionary of Preventive Medicine. For his comfort he may remember that to prolong human life and make it fuller, better, and more effective, is the "master task of mankind."

THE TEACHING OF OBSTETRICS AND GYNAECOLOGY.

BY

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THE shortcomings of the old midwifery training must have been obvious to all those who, fortified by having recently passed an examination in anatomy and physiology, sallied forth into the outdoor maternity district to pick up, under no supervision whatsoever, what they could of the practice of midwifery under the worst possible conditions. Lamenting past deficiencies will, however, serve no useful purpose and time and space will be better occupied in describing present methods and ideals, so far as can be done by one teacher, speaking on behalf of many.

NEW AND WIDER VIEWS.

A beginning may be made by outlining the changed view of what is included under Midwifery and the Diseases of Women. Though the title is double, the subject is not: it is the study of normal and abnormal reproduction and the diseases of the reproductive tract in women, and it cannot be taught in two separate pigeon-holes as obstetrics and gynaecology. It must be presented to the student from the aspect of preventive and curative medicine—midwifery representing chiefly the preventive and gynaecology the curative and reparative side—and the more the subject can be widened to include an outlook over the whole reproductive cycle—from one generation to the maturity of the next—the more educative will it be.

Training in midwifery cannot be expressed merely in terms of attendance on labour, within and without the hospital, but must include all the machinery of what is commonly termed a maternity centre. Pregnancy, labour, lying-in, and lactation are physiological states and in all of them our primary object is the maintenance of the physiological and the avoidance of the pathological. The physiological study of reproduction is, therefore, the essential foundation on which practice must be built, and no opportunity must be lost of interesting the student in all phases of the normal functioning of the reproductive system. In the ante-natal clinic he will be taught the observation and care of the pregnant woman with the object of detecting and remedying any deviation from the normal. For the first time in his training the student sees patients, of whom the vast majority are not ill, in order to pick out occasional cases in which trouble may be brewing or may be feared in the future. He will learn the examination of women in all stages of pregnancy, and the warning signs that enable its disorders to be detected early and preventable difficulties in labour forestalled. In the wards the investigation and treatment of the more serious diseases of pregnancy will be carried out with the help of biochemical and other laboratory methods, and the conduct of labour learnt first in the maternity ward, under the best conditions, with all the resources of the hospital at hand. The birth itself will not be taken as the "be-all and end-all" of midwifery, but as a stage in the reproductive process and a critical one calling for special care. The management of the puerperal woman and the nursing mother and her infant will likewise be followed with the same object of keeping healthy patients in health, and observing the physiological processes of involution, lactation, and the early development of the child. The follow-up of mother and child throughout the period of lactation in the infant clinic is the natural corollary of this part of the work.

The diseases of the reproductive tract are largely represented by (1) infections, due to gonorrhoea and puerperal sepsis, (2) mechanical lesions resulting almost entirely from injury at childbirth, and (3) new growths. Of these the first two are preventable and should be presented first to

the student from this aspect and afterwards from the curative and reparative side. It will be obvious that touch should be kept with cases of puerperal fever and with the female venereal disease department, if the preventive aspect of infections is to be fully illustrated.

Having completed his training in clinical medicine and surgery, in which the diagnosis of disease and injury and their treatment and repair in the individual patient have been studied, the student comes to the reproductive function, not essential to the life of the individual but essential to the life of the race, and the opportunity must now be taken to make him think in terms of the community as well as of the individual and realize that he will have a place in a team working to improve the national health and physique. Once he can visualize the work of the maternity department with its follow-up sides, the gynaecological department, and the infant clinics, his whole outlook may be enlarged whilst learning the practice of obstetrics, gynaecology, and pediatrics.

Some reference may be made to the debatable point of the place of systematic lectures, as they have of late fallen somewhat into disrepute, especially in England. A pressed audience is bad for the lecturer and difficult to satisfy, and if attendance on them was not compulsory the prestige of lectures would at once improve. The student would attend without compulsion if he could obtain something he cannot get equally well from his books, and the lecturer would estimate the worth of his lectures by the size of his audience. Systematic lectures have a place if designed to expand and give light and shade to the student's reading by illuminating through clinical experience the lessons taught, and bringing into prominence what is frequently met with and putting into the shade many of the rare and curious scraps from books that often unduly impress the mind of the student. The bearing of anatomical and physiological points on clinical practice can be illustrated and interest aroused on many problems of reproduction affecting the national welfare—heredity and eugenics, the birth rate, child-bed and infantile mortality and invalidity, and the improvement of the national physique—on which guidance from well informed medical opinion may be sought regarding voluntary, municipal, or State schemes of public health.

PLANNING THE STUDENT'S COURSE.

Coming now to the actual training to be given, a whole-time minimal period of six months should be allotted to obstetrics, gynaecology, and pediatrics, and early in the first half of this term the student must be in residence for six weeks. A couple of weeks at the beginning of the term may be profitably spent in obtaining a bird's-eye view of the work of the centre as a scheme of preventive medicine, concentrating particularly on the ante-natal clinics and the practice of the maternity wards, and at the same time attending obstetric demonstrations on the dummy. The resident period, as representing the time of most intensive training, should be taken early and the hospital method of delivery and management of the lying-in mother and infant acquired under supervision. Maternity beds, either in a lying-in ward in a general hospital or in a lying-in hospital, must be of sufficient number to allow each student a minimum of five deliveries and to train him in the management of normal and abnormal pregnancy and labour and of the lying-in mother and infant. Obviously, the number of beds must correspond with the number of students trained, but if during his term of residence the average number of deliveries is less than one a day, it cannot be said that the student is really working in an obstetric atmosphere. As pointed out by a committee of the Obstetric Section of the Royal Society of Medicine in 1919, the system of staffing maternity hospitals in England and Scotland militates against efficiency in the teaching of difficult and complicated labour, as a visiting staff does not permit of the continued presence of an experienced teacher throughout a prolonged case; that committee advocated the union of small into large institutions, with at least 75 beds and a resident chief of the standing of the Master of the Rotunda in Dublin. From the educational point of view the Rotunda system presents obvious advantages, but the rearrangement and rebuilding that its introduction into England and Scotland would entail are almost impossible under present financial conditions. The centralization and amalgamation of existing institutions would appear more feasible in provincial schools, where there is a University that can exert pressure on its constituent teaching institutions, than in London, where the inherent tendency of each medical school to remain self-contained and self-sufficient is difficult to overcome in the absence of a central co-ordinating authority. Oxford and Cambridge did much to further the teaching of midwifery in London by their immediate and whole-hearted adoption of the recommendations of the General Medical Council (1906) insisting on hospital practice, whereby the medical schools were compelled to open lying-in wards or otherwise make provision for the training of those of their students proceeding to a medical degree at the old Universities, such facilities becoming available for all. A still greater advance could be made if, by a combination of the London schools into three or four obstetrical centres and amalgamation with lying-in hospitals, large institutions on the Rotunda model could be inaugurated. Such reorganization would assist in getting over another difficulty, the shortage of cases owing to the number taken up for the training of midwives, in regard to which the regulations of the Central Midwives Board are much more strictly drawn than those of the medical qualifying bodies.

THE LYING-IN WARD AND THE DISTRICT.

While urging further and better training, the most must be made of the material at present available, and the management of labour and lying-in, as conducted in hospital, acquired under the supervision of a teacher, first by watching cases delivered by other students and then by personally conducting deliveries. In one hospital the management of normal labour may be taught by the sister-midwife in charge of the labour room, at another by a house officer, at another perhaps an obstetric tutor or registrar, but never by a member of the visiting staff. My personal feeling is strongly in favour of a sister-midwife; she is much to be preferred to a temporary house officer, and the student, who in after-life will have to supervise and assist midwives, had best begin by learning the conduct of normal labour as the midwives do and of abnormal labour from his medical teachers. My chief contention in favour of this plan is that it is the logical sequence of the fundamental principle of the physiological character of labour, which must ever be impressed on the student; normal labour can be left to the midwife, as the nursing of the lying-in mother and infant is left, the function of the medical attendant being the careful supervision before, during, and after labour, but not necessarily entailing his constant presence throughout labour or at the moment of birth. Even in a hospital with an experienced resident chief it would be ridiculous and wasteful excess if the steam-hammer was used to crack nuts.

After a month's experience of hospital midwifery and having acquired thoroughly the hospital routine, the student's education should be completed by learning how to apply these methods to the more difficult conditions met with in the homes of the women in the district. For district work to be really educative to the student a health visitor or other social worker should select the homes suitable and exclude those wholly unsuited; attendance in houses in which it is impossible to carry out an adequate surgical technique only results in discouraging the student and encouraging slovenly methods. The obstetrical registrar or house officer should closely supervise the student's work, making occasional visits with him and seeing that daily reports are presented of all the patients under his charge. Under satisfactory conditions the work on the district is most valuable; for the first time the student is brought into touch with patients in their own homes, where he has an opportunity of seeing the conditions under which they live, how poverty, housing conditions, and lack of education and training in the mother may affect the health of herself and her children, of studying social work, and learning how other agencies, public and voluntary, may be called in for assistance, and generally how to work in with the local health authorities and the whole team of health workers.

Training in complicated labour and obstetric emergencies is more difficult to obtain because there are few schools

where the number of abnormal cases in proportion to the number of students is sufficient to provide the necessary material. Difficult and operative cases must be seen by all students in residence and within call. The diagnosis of obstetric complications is acquired in the ante-natal clinic as well as in the labour room, obstetric manipulations are taught on the dummy and foetus and by making the utmost of the hospital clinical material by demonstration to as many students as possible. Many of the lesser procedures—low forceps and the like—will afford opportunities for the student in the later stages of his training to carry out these operations under the supervision of his teachers.

Preventive measures during pregnancy have so greatly diminished the proportion of complicated cases—especially misfits between the head and pelvis, malpresentations, and eclamptic convulsions — that the number of obstetric difficulties available for teaching are correspondingly less. The high forceps operation, craniotomy, and version for shoulder presentation are now rare events, and delivery by the breech is reduced, by turning some weeks before term, to a small percentage of its former frequency. There is less alteration in the treatment of the albuminuria of pregnancy and *ante-partum* haemorrhage, in which the management largely consists of rest in bed and observation to determine whether interference is called for and, if so, the most appropriate moment and method. Errors of observation, emergency cases sent into hospital, and unavoidable complications will always provide a certain number of difficult labours, which must be discussed with the students in the same attitude of prevention that pervades all their teaching. The first question will be: Could this complication have been foreseen, and, if so, how did it come to be overlooked? Had it been foreseen, what better could have been done and what troubles to mother and child might have been avoided? This attitude of mind should be maintained even towards such trifling procedures as the low forceps operation by considering the factors that interfere with uterine efficiency. Were any of these present in this case and could anything have been done to secure a physiological labour for this woman?

The Gynaecological Side.

Early in the third month clerking in the gynaecological department will be begun, spare time being portioned out between the maternity and infant clinics. Diagnosis is learnt most easily on patients in the wards and bimanual examination on those under anaesthesia, but, as the out-patients approach more closely to conditions met with in general practice, close attendance on them is especially important. Provided attention is not unduly concentrated on dramatic and striking operations and the most made of minor procedures, the teaching of gynaecology is simple and straightforward compared with that of midwifery; except that the opportunities for pelvic examination of women are more limited, it differs but little from clinical teaching in medicine and surgery. The nervous and psychical element is intimately bound up with sexual and reproductive disorder and this aspect is easily overlooked, but ought to be kept before the student, for its importance in practice can scarcely be overestimated. The student, having already learnt his general pathology, only requires such features as are peculiar to the reproductive function to be emphasized, and they can be best illustrated by demonstrations of material from the department, the naked-eye and microscopical investigation of which is part of the case record.

Unity in Diversity.

All schools and teachers have their own individuality, determined more by variations in the atmosphere in which teaching is conducted than in method. Thus the writer's own atmosphere may have distorted the perspective of this sketch by making some features stand out too prominently and others recede too far into the background; but the general impression may be taken to represent the present-day aspirations and ideals of those who, in this subject, endeavour to train up the student in the way he should go.

The Profession of Medicine.

Introductory.

For long past the annual Educational Number of the British Medical Journal has appeared at this time of year, when the opening of a new session is at hand. The remarks that follow, on the profession of medicine, are addressed more particularly to intending students and their parents. It would be out of place to discuss medical politics at large, but the occasion may be taken to touch briefly on a few current matters affecting professional study and practice. If an opinion is expressed on debatable topics it must be understood that our object is not to lay down the law, but to put certain considerations before those who think of devoting their lives to medicine, and thus help them to judge of their fitness for the calling and of the prospects it holds out. There is no profession for which a special vocation is more necessary. And (it should perhaps be added) there are few professions in which a fortune is less likely to be made.

Our present issue, then, is largely a guide to the steps that must be taken in order to become a legally qualified practitioner. It contains also certain sections intended for younger members of the profession who may be in doubt as to the path in medicine they should choose as a career, and a section on the facilities for post-graduate study in Great Britain. The particulars given under these two main heads are founded for the most part on official information, and are arranged along the customary lines; but, following last year's plan, we publish in this issue two introductory articles on particular features of medical education, each from the pen of a recognized authority. Sir George Newman writes on the need for permeating the student's whole course of training with the spirit and methods of preventive medicine, and indicates the steps already taken to attain that end by reformation of the curriculum. Dr. John Fairbairn, in his note on the teaching of obstetrics and gynaecology, discusses certain ways in which the "preventive idea" may be carried further into this most important branch of medical education. The two articles are thus complementary, each emphasizing, one in general terms and the other from a special point of view, the significance of prevention in the study and practice of medicine. Apart from these and other special articles, the prospective student will find in subsequent pages an account of the course of education required of him, the places where this training can be obtained, and the universities and other bodies which test the knowledge gained and issue degrees or diplomas entitling successful candidates to become registered medical practitioners.

Portals of the Profession.

As will be seen from a perusal of the articles in this issue, there are many portals through which admission may be obtained to the *Medical Register*, which is the official statutory list of qualified medical practitioners. Yet the medical courses of all the universities and corporations in Great Britain and Ireland run on parallel lines, and the obligatory curriculum is much the same in all. Within these broad lines, however, there are many differences between the requirements of the various teaching and examining bodies. The choice should therefore be made early, so that a definite plan may be followed throughout the years of study. To prevent a false step at the outset

the student and his advisers should endeavour to obtain a clear idea of the object to be aimed at, of the relative advantages of taking one or other of the degrees or diplomas open to him, and of the comparative difficulties they present.

All who wish to enter the medical profession must comply with certain conditions. These are prescribed by the General Medical Council, which is a statutory body established under the Medical Acts; a statement of its requirements is given at page 355. It will be observed that many changes have lately been made in the medical curriculum, and this section should be studied with care. Every medical student, after passing examinations in the subjects of general education and in the preliminary sciences, must take a course of training at a recognized medical school, covering at least a period of five years but usually extended to six years or more. The examination of candidates as to their fitness to practise medicine is left to the licensing bodies, which are of two kinds—the universities, and certain corporations in England, Scotland, and Ireland. One of the functions of the General Medical Council is to make sure that the tests at each stage do not fall below a certain standard, and that the students examined have undergone prescribed courses of instruction at recognized institutions. Successful candidates at such examinations eventually receive from the body holding them either degrees, in the case of a university, or diplomas or licences, in the case of a corporation; these qualifications entitle them to claim insertion of their names in the *Medical Register* kept by the General Medical Council. Holders of diplomas and licences once made up the great majority of all medical men, especially in England and Wales. But universities have greatly multiplied, and so many practitioners are now graduates that a student of ordinary ability will be well advised to aim at a medical degree, though it may be desirable to take also a diploma or licence.

Cost of Medical Education.

At this point the question of the cost of a medical training naturally arises. The answer, however, cannot possibly be given in a single precise statement, because the outlay varies within wide limits. Besides differences in the charges made by medical schools for instruction there are differences in examination fees, as well as in those payable for the certificates of qualification. Again, not all students, however industrious, pass examinations with equal facility. Since in any case professional education must continue for five years at least (a period exceeded by the vast majority), and since the cost of living in different parts of the country varies much, while personal expenditure varies still more, it can only be said in a general way that anyone who thinks of entering the profession must assume that a medical education—first and last—will cost at least £1,500. On the other hand, the number of scholarships and prizes now offered is larger than in the past; in the Scottish universities bursaries are numerous, and the Carnegie Trust gives financial assistance to many Scottish students. It will be seen, however, that, as compared with other professions, the period of training in medicine is long, and for most students costly. There is also to be remembered the time of waiting after qualification when income is apt to lag behind expenditure.

Choice of a Career in Medicine.

The student, having passed all his tests and placed his name on the *Medical Register*, becomes a member of the profession and assumes the privileges and responsibilities that go with legal qualification. But the final examination, though a great event in his life, is only the opening of a door into a wider field of training. Education must continue throughout his career; a good doctor remains always a student. As an introduction to practice nothing is so useful to the newly qualified man or woman as a year or more spent in junior hospital appointments; and all who can afford the time should look upon an "internship" as a most valuable investment. Next comes the choice of a career in the larger world of medicine. Many paths are now open—for example, general practice, Government service at home or abroad, and special work in public health or mental disorder, in scientific research, or in one of the many modern subdivisions of medicine and surgery. Most of these different paths in medicine are considered in some detail in the later sections of the Educational Number, but a few words may be said here about general practice and the work of a consultant or specialist. A good deal of information on these and other cognate matters will be found in the *Handbook for Recently Qualified Medical Practitioners*, published by the British Medical Association.[1]

General Practice.

General practice is still the goal of the great majority of all medical students, and it is beyond question that this country produces the finest body of general practitioners in the world. The life is onerous and exacting; a recent writer has said: "Of all professional men, the general practitioner is the worst paid and the hardest worked."[2] Nevertheless, general practice has its compensations, and it appeals to many of the very best students; which is fortunate, both for medicine and for the public. This career is usually entered upon in one of three ways. The newcomer may take a house and wait for patients to seek his services; he may purchase the goodwill of a practice rendered vacant by retirement or death; or—perhaps best of all—he may become a partner in an established practice. Success in the work of a private practitioner demands, however, a great deal of knowledge other than that gained at the medical schools, and consequently a man is more likely to be accepted as a partner, or to succeed on his own account, if he has already some experience of family practice as an assistant or deputy. An all-round knowledge of practical medicine, surgery, and obstetrics should, if possible, be supplemented by skill in some particular branch of practice. Moreover (as already hinted), the value to a general practitioner of having held one or more resident hospital posts is incalculable. "In after-life," writes Sir William Macewen, "one can generally pick out those who have been thus trained, as they gain a confidence and reliance and experience which they cannot easily obtain elsewhere."

Consultants and Specialists.

As for those whose aim it is to become a consultant or specialist, their path, though full of interest, is seldom smooth. For them success will depend in the long run not only upon mental gifts and capacity for hard work, but (as is true of practitioners of all branches) on the possession of those qualities which inspire confidence both in patients and in colleagues. As Sir Clifford Allbutt has well said: "In practice, personal tact and character are as important to the operations of a physician as scientific equipment." Moreover, since the consultant or the specialist can scarcely hope at first to pay his way by consulting work or by the practice of his specialty, he must either have the means to support himself for an uncertain period or be prepared by teaching or in other ways to defray expenses; a hospital appointment is almost indispensable. The question of additional degrees and diplomas is of special moment to those whose ideas turn

[1] *Handbook for Recently Qualified Medical Practitioners.* 1923. British Medical Association, 429, Strand, W.C.2. 2s. 6d. net.

[2] *An Index to General Practice.* By A. Campbell Stark, M.B. 1923. Baillière, Tindall and Cox. 5s. net.

in this direction. Beyond the qualifications which admit to the *Medical Register*, most of the licensing bodies bestow higher titles, such as Doctor of Medicine or Fellow, after further tests. For the career of a consulting physician the M.D. degree of a university is usually necessary, and also the membership of one of the three Royal Colleges of Physicians, according to the part of the British Isles in which practice is contemplated. In the same way, the Fellowship of one of the three Royal Colleges of Surgeons should be sought by those proposing to devote themselves to surgery. There are also diplomas in a growing number of special branches of work, such as public health, tropical medicine, ophthalmology, radiology, and mental disease, which are superfluous for most practitioners, but either useful or indispensable for the medical man or woman who wishes to specialize in these subjects.

Financial and Social Considerations.

The financial aspect of medicine cannot be discussed here at length. Three remarks must suffice: Medicine is not to be regarded as a path to fortune, and anyone who enters our profession with the sole idea of making money has mistaken his calling. The competent practitioner, at any rate in urban districts, can always make a living, but the main reward of the medical life is the knowledge of good work well done. Whatever the branch of practice chosen, there are few doctors who become what a business man would consider even moderately rich by the exercise of their profession.

But if medical practice, from the financial point of view, offers little more than a means of livelihood, in its social and intellectual aspects the prospect is brighter. The culture which once belonged to the physician alone, entitling him to his place among members of the learned professions, has spread into all ranks of the practitioners of medicine. The great improvement in the education, general as well as technical, of the practitioner, has added much to his influence in public life, and has been a large factor in raising his social status during the past sixty years. No medical specialty is so narrow but that it affords scope for intellectual achievement in an atmosphere of service for others.

The Numbers of Medical Students.

Nearly five years have passed since the war ended, but some of its effects upon our profession can still be felt. One effect was a great increase in the number of medical students, both men and women, but especially women. This matter has often been discussed in these pages, so we give here an outline only of the story. It may be read in conjunction with the note at page 355 on the numbers of the profession. In the thirteen years before the war the annual entry of medical students in Great Britain and Ireland averaged 1,400. During the war period the total number of students pursuing their studies in the various medical schools was ascertained and made public from time to time. These figures showed that from 1914 to 1919, although many left to serve with the Forces, the whole number actually studying in the schools was growing steadily larger. Thus, in May, 1916, the total was 6,103; in May, 1918, it was 7,630; and in the following January it had risen to 9,490. After the armistice the total figures were no longer published, but the number of entrants recorded in each year told its own tale. Thus, during 1919, when demobilization was in active progress, 3,420 new students were registered. The number of new students in 1920 fell to 2,531, and in 1921 to 1,808. In 1922 the entries rose to 1,833, notwithstanding the higher educational standard demanded by some of the licensing bodies. The great increase after the armistice threw a heavy strain on the schools, and the subsequent fall in the entries was welcomed, both by the overcrowded teaching institutions and by those who feared there might not be work enough to go round when the students of to-day become qualified. As it is, the ratio of medical practitioners to population is greater now than at any time in the past half-century. The new regulations which came into force at the beginning of this year should do something to keep the number of students within manageable bounds.

Private Practice: The Outlook.

The prospects held out by the various public medical services are indicated in later sections. Here we may note very briefly some circumstances that have a bearing on private practice. In the first place, efforts are being made to bring professional training more into line with the growth and differentiation of medical science, and so to raise the level of medical practice; it was with this in view that the student's curriculum has lately been recast. Next, the fundamental importance of the work done by the general practitioner is better understood, and it is more fully recognized that an efficient medical service for the community must be based upon the individual skill and devotion of the family medical attendant, working in ever closer touch with the aims and methods of preventive medicine.

The National Insurance system, now more than ten years old, has already had a profound influence upon general practice. The Insurance Medical Service comprises nearly 14,000 practitioners, some doing much work among insured persons, others little. If the freedom of family practice has been restricted by the Insurance Acts and Regulations, they have probably rendered it easier for a doctor to make an assured income out of attendance on working-class patients. The full effect of the insurance system upon the medical profession cannot as yet be gauged. Some of its most objectionable features have been removed through the efforts of the Insurance Acts Committee of the British Medical Association, which is the central executive of the Local Medical and Panel Committees of the country, and represents the interests of insurance practitioners in all negotiations with the Government. But the capitation rate of payment for the medical attendance and treatment of insured persons is once again under revision, and the future of panel practice turns to a large extent upon the value set by the State upon the general practitioner and his work.

Increasing contact with public duties and official requirements not only makes new demands on the practitioner; it adds uncertainty to his outlook. Thus a recent writer on medical practice predicts that in another two generations doctors will be servants of the State, meaning by this that a class of State practitioners will be formed who will devote their whole time to insured persons and their dependants. Mr. Sidney Webb, speaking from the chair at the last annual Conference of the Labour Party, indicated 1926 as the date of Labour's accession to power, but affirmed that our next masters will not try to do everything at once; each step towards their goal will (he said) depend on gaining the assent and support of the majority of the people. This, for what it is worth, suggests that the setting up of a whole-time salaried State medical service, towards which the Labour Party is understood to lean, may perhaps be deferred until such time as it is definitely favoured by the greater part of the electorate; but it is all rather disturbing, and the future of private practice is difficult to forecast.

Professional Organization.

Obviously, in these times of social and professional change the doctor needs a strong sense of *esprit de corps:* the effects of modern measures are apt to be so far-reaching that no practitioner, whatever his work or position, can safely stand aside from his fellows. It follows, therefore,

that medical men and women must band themselves together for the common protection of their profession and themselves. The first step after qualification should be to become an active member of the British Medical Association and to join one of the two professional defence societies. A young practitioner will find in the meetings of the local Division of the British Medical Association many opportunities, not only of keeping abreast with the progress of medicine, but also of friendly intercourse with colleagues.

The Association was founded in 1832 to promote the medical sciences and to maintain the honour and interests of the profession. A brief note on its objects and constitution, and the advantages offered to members, will be found at page 398. The record of ninety years' work shows that professional organization, directed with wisdom and imagination, can successfully combine service for its members with service for the public. Greater work remains to be done in each direction, and we look to the rising generation of doctors to take their share.

THE NEW ERA IN MEDICAL EDUCATION.

A FULL account of the resolutions and recommendations of the General Medical Council which have applied since the beginning of 1923 is given in the present issue of the JOURNAL. Here we propose to indicate some of the salient features of the new scheme, both of study and of examination.

The Revised Curriculum.

The minimum age for registration as a medical student has been increased from 16 years to 17 years. Formally, the length of the medical curriculum is not added to; practically it is, by transferring to preliminary study and examination the subjects of elementary physics and chemistry in their purely scientific aspects. In their applications to the professional courses—as in biophysics, biochemistry, and pharmacological chemistry—appropriate instruction is to continue throughout the curriculum, and is to be tested by examination, so that the student shall no longer be able to put behind him as passed and done with the knowledge which he acquired as a preliminary. If he has had no facilities at a secondary school or otherwise for obtaining what is necessary for the preliminary examination in these subjects, then he can come for it to the university or college, but study there will not count for the medical curriculum.

In biology it is understood that comparatively few secondary schools are equipped for elementary tuition, but the Council has suggested an ingenious arrangement for utilizing the work of such schools as are qualified for the purpose. The examination will not be "pre-curriculum," but the instruction may be so, and a licensing body can allow students who so desire to sit for the examination immediately after matriculation. Here again, however, the applications of biology to medicine, surgery, and midwifery will continue to receive attention throughout the courses.

The Council attaches great importance to the reservation of sufficient time for the later subjects of study, free from all worries about passing the examinations of the earlier parts. To that end it recommends what is practically a block system. A minimum of three years should be available, not merely after the courses of anatomy and physiology have been taken, but after the professional examinations have been passed. The value of this proposal is obvious.

Examination Reform.

Another notable feature is that in assessing marks in the several examinations account may be taken of "duly attested records of the work done by the candidate throughout his course of study" in the subject. This is an effort to meet the long felt difficulty that a man's mental agility, or the want of it, counts far too much in his being passed or rejected. The difficulty is real, but the remedy is not easy, and the Council is wise in the cautious approach it makes towards a solution. Where, as in the colleges, a student will only by chance come before his own teacher as an examiner, absolute impartiality in the attested records will be necessary. A teacher must not play for popularity with students by too easy certification of diligence or success in class. On the other hand, at the universities, where the teacher is always one of the examiners, no personal like or dislike of a student must influence the report of the internal to the external examiner. The class records should, of course, be available, but the scheme will put a serious ethical obligation on all concerned, and the Council will doubtless watch its operation with keen and critical interest.

Besides the Resolutions of the General Medical Council in regard to professional education and examination (see pages 355-358), a series of additional Resolutions was adopted on May 26th, 1922, as follows:

(*a*) That throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspects of Medicine;

(*b*) That each Licensing Body should make adequate arrangements for the effective correlation of the several subjects of study throughout its curriculum;

(*c*) That the teaching of Anatomy and Physiology should include as a regular part of the courses the demonstration on the living human body of structure and function;

(*d*) That the curriculum should be so arranged that a minimum period of three years shall in every case be available for study after the completion by the student of the Professional Examinations in Anatomy and Physiology held at the close of the second year;

(*e*) That the curriculum should be so framed as to afford sufficient opportunities for the study, during the last three years of the course, of Physics, Chemistry, Biology, Anatomy, and Physiology in their practical applications to Medicine, Surgery, and Midwifery, and that the student's knowledge of these applications should be subject to test in the Final Examination;

(*f*) That before the student is admitted to his clinical appointments he should have received practical instruction in clinical methods and in the recognition and interpretation of physical signs;

(*g*) That instruction should be given, in the courses of Forensic Medicine and Public Health or otherwise, on the duties which devolve upon practitioners in their relation to the State, and on the generally recognized rules of Medical Ethics. Attention should be called to all *Notices* on these subjects issued by the General Medical Council.

Training in Preventive Medicine.

The first of these resolutions should be borne in mind by every teacher throughout the whole curriculum, and not merely in the clinical subjects. As indicated in a questionary issued by the Council in 1918, all the earlier subjects—Physics, Chemistry, Biology, Physiology, Anatomy, and, of course, Pathology, Bacteriology, and Therapeutics also—afford opportunities from the very beginning for instilling into the mind of the student the necessity for his keeping constantly in view, in all the advice and treatment he may give throughout his professional life, the primary importance of promoting the general health of those who entrust themselves to his care, and of preventing trivial ailments from developing into definite disease. In his presidential address to the Council five years ago Sir Donald MacAlister pointed out that if "the efficient practice of their profession" by doctors was "to be judged by new civic standards, and to be carried on under new conditions," the student would have to be trained accordingly. The era of that training has begun formally this year. Though no details are given in resolution (*a*), and though it may require some change of orientation by teachers who have hitherto given no special heed to the bearings of their subject on the maintenance of health and the prevention of disease, yet they will doubtless join heartily in what will indeed be an epoch-making advance in medical education in this country. Its reflex and reward will surely be found as time passes in a diminution of sickness and prolongation

of life, in the raising of the present standards of physical health and national welfare.

New Rules for the D.P.H.

It is important to note the bearing that this development of the teaching of disease prevention to all students of medicine has upon the stringent rules which will come into force at the beginning of 1924 for the obtaining of diplomas in public health (see page 391). Fears have been expressed that the stiffening of the requirements will discourage those who intend to go into ordinary medical practice from taking the additional qualification which would specially fit them for co-operation with the health officer of their district. The reply is twofold: Henceforward all new practitioners will have received tuition qualifying them generally for such co-operation, and in addition they are already being systematically educated in "the duties which devolve upon practitioners in their relationship to the State." The balance, therefore, seems clearly on the right side as to the ordinary practitioner, and there will unquestionably be advantages in strengthening the education of those who aspire to a life spent in the public health service. In America, it may be mentioned, the standard of study for a "doctorate" in public health will at most medical schools probably correspond with that for the new health diploma in this country.

THE NUMBERS OF THE MEDICAL PROFESSION.

A Review of Forty-five Years.

Since the year 1870 the General Medical Council has kept an analytical record of the number of persons whose names were entered in, added to, or removed from the *Medical Register* in each twelve months. The *Medical Register* has been published annually since the Council was constituted under the first Medical Act of 1858; but up to 1876 no such data as these were ascertained or preserved.

In order to gain a general view of the numerical strength of the medical profession during the past forty-five years we have extracted from the tables and set down in parallel columns the total number of names in the *Medical Register* on December 31st of each year, and the total number added annually by registration between 1876 and 1922.

The figures for each year since 1899 are given in a statistical table published in the current *Register;* the corresponding figures for the earlier years have been taken from copies published previous to 1899.

Numerical State of the "Medical Register."

Year.	Names added in Year.	Total No. on Dec. 31.	Year.	Names added in Year.	Total No. on Dec. 31.
1876	1,009	22,713	1900	1,345	36,355
1877	940	22,841	1901	1,318	36,912
1878	996	22,600	1902	1,275	37,232
1879	996	22,516	1903	1,233	37,878
1880	1,123	22,936	1904	1,168	38,492
1881	1,053	23,275	1905	1,240	39,060
1882	1,171	23,801	1906	1,197	39,529
1883	1,304	24,517	1907	1,221	39,827
1884	1,388	25,321	1908	1,137	40,257
1885	1,377	25,998	1909	1,143	39,818
1886	1,431	26,452	1910	1,062	40,483
1887	1,531	27,246	1911	1,042	40,913
1888	1,184	27,939	1912	1,157	41,439
1889	1,305	28,348	1913	1,168	41,940
1890	1,266	29,163	1914	1,433	42,378
1891	1,345	29,555	1915	1,526	43,225
1892	1,513	30,590	1916	1,202	43,481
1893	1,579	31,644	1917	1,134	43,819
1894	1,426	32,637	1918	1,077	43,926
1895	1,446	33,601	1919	1,322	44,510
1896	1,385	34,478	1920	1,457	44,761
1897	1,230	34,642	1921	1,760	45,408
1898	1,210	35,057	1922	1,984	46,477
1899	1,751	35,836			

The following table indicates the varying proportion of registered medical practitioners to population during the period under review. It shows the total population of the British Isles at each decennial census since 1881, and the corresponding total number of names on the *Medical Register*.

Proportion of Practitioners to Population.

Year.	Registered Practitioners.	Population, British Isles.
1881	23,275	35,241 482
1891	29,555	38,104,975
1901	36,912	41,976,827
1911	40,913	45,370,530
1921	45,408	47,261,530

These parallel columns of figures reveal a general tendency during the past forty-five years towards an increase in the ratio of doctors to population. The number of registered practitioners at the end of 1921 was almost exactly double the number at the end of 1876, but the population within that period only increased by about 50 per cent. During the year 1922 the new medical registrations numbered no fewer than 1,984, and there was a net increase of more than a thousand names. If the rate of increase is maintained in the present year, the time may not be far distant when there is one name in the *Medical Register* to every thousand of population.

THE GENERAL MEDICAL COUNCIL.

The General Medical Council was set up by the first Medical Act of 1858, and consists of thirty-eight members, six of whom are elected by the medical profession, five nominated by the Privy Council, and the remainder are representatives of the universities and such medical corporations of the United Kingdom as have a statutory right to issue diplomas. Under the Dentists Act, 1921, three additional members have been appointed by the Privy Council for dental business; they must be qualified and registered dentists and members of the Dental Board. The Council's headquarters are at 44, Hallam Street, Portland Place, W.1, and it has branch offices at 20, Queen Street, Edinburgh, and 35, Dawson Street, Dublin. Its duties are to control the medical and dental professions in the interests of the general public, and to that end to maintain a register of legally qualified medical practitioners. It is admission to the *Medical Register*, and not the possession of a degree or diploma, that constitutes a person a legally qualified practitioner. The Council is bound to admit to the *Medical Register* those who hold the qualifications granted by the bodies represented among its members, but it exercises supervision through the Privy Council over the terms on which those bodies grant such diplomas or degrees, and it can erase from the *Medical Register* or the *Dentists Register* the name of any medical man or dentist who has been convicted before a court of law of an ordinary crime or of a serious offence against public order, or who is proved before the Council itself to have been guilty of certain actions which the Council regards as professionally "infamous." Its disciplinary powers are limited to legally qualified practitioners, and it has no control whatever over irregular practitioners of any kind. In that respect it differs from the Midwives Board in England and Scotland, which can penalize unqualified midwives, even if they make no pretence to be on the midwives roll, and from the Dental Board of the United Kingdom, which, now that the Dentists Act, 1921, is in operation, can prosecute unregistered persons practising dentistry.

An account of the Recommendations that the Council has drawn up in respect of the education of medical students here follows.

Registration of Medical Students.

The Council recommends that every intending student of medicine should be registered as such at one of its three offices, whose addresses are given below.

As from January 1st, 1923, candidates must produce evidence (*a*) that they have attained the age of 17 years; (*b*) that they have passed an examination in general education which is accepted for matriculation or entrance to the Faculties of Arts or Pure Science in a university in the United Kingdom; (*c*) and in addition thereto that they have passed an examination in elementary chemistry and elementary physics conducted or recognized by one of the licensing bodies.

Application for registration should be addressed to the Registrar for the division of the United Kingdom in which

the applicant is residing—England and Wales, or Scotland, or Ireland. It must be made on a special form, which can be obtained from one of the offices of the General Medical Council itself or from one of the various licensing bodies and medical schools.

The regulations with regard to registration apply equally to medical and dental students, with the exception that in the case of the latter pupilage with a registered dental practitioner may be regarded as a commencement of professional study, and that applications for registration should be addressed to the London office only.

PROFESSIONAL EDUCATION.

The rule is that it is only from the date which appears against his name in the *Students Register* that the medical student's career officially begins; thereafter five years must pass before he can present himself for the final examination for any diploma which entitles its lawful possessor to registration as a qualified medical practitioner under the Medical Acts; but to meet the circumstances brought about by the dates at which sessions of the medical schools begin and end, the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration. In any case, the period of five years must be one of bona fide study, and in every course the following subjects should be included:

(i) Elements of General Biology, including an introduction to Embryology. This course, if the Licensing Bodies permit, may be taken before registration, and the examination may be passed immediately after registration.
(ii) Chemistry, Physics, and Biology in their application to Medicine.
(iii) Human Anatomy and Physiology, including Histology, Elements of Embryology, Biochemistry, and Biophysics.
(iv) Elementary Bacteriology, prior to regular clinical appointments.
(v) Pathology, general, special, and clinical, and Morbid Anatomy.
(vi) Pharmacology and Materia Medica, to be taken concurrently with clinical instruction.
(vii) Forensic Medicine, Hygiene, and Public Health.
(viii) Medicine, including applied Anatomy and Physiology, Clinical Pathology and Therapeutics, Children's Diseases, Acute Infectious Diseases, Tuberculosis, Mental Diseases, Skin Diseases, and Vaccination.
(ix) Surgery, including applied Anatomy and Physiology and Clinical Pathology, Anaesthetics, Diseases of the Eye, Ear, Throat and Nose, Radiology, Venereal Diseases, and Orthopaedics.
(x) Midwifery and Diseases of Women, including ante-natal conditions and infant hygiene.

The Council recommends that during the last three of the five academic years clinical subjects shall be studied.

The first two years must be passed at a school of medicine recognized by any of the licensing bodies enumerated in the schedule to the Medical Act of 1858, and the remainder must be devoted to clinical work at any public hospital or dispensary at home or abroad which is recognized by a licensing body.

SPECIAL CONSIDERATIONS.

The requirements of the General Medical Council in respect of the education of those who desire to enter the medical profession have now been given in outline, but before leaving this part of the subject the steps which the aspirant should take may be rehearsed in their due order:

(1) Pass an examination in arts;
(2) Pass an examination conducted or recognized by a licensing body in elementary physics and elementary chemistry.
(3) Enter himself at a medical school or other scientific institution approved by the Council;
(4) Get himself registered as a medical student;
(5) Study for a minimum of five years certain prescribed subjects;
(6) Meanwhile pass sundry intermediate examinations; and at the end of the fifth year pass a "qualifying examination" which will entitle him to receive from a licensing body a legal authority to practise.

The Minimum Period.—It must be remembered that the period of five years is a minimum; more is often required even by the man of good abilities and reasonable industry. Besides these qualities a student, to obtain a registrable qualification in the minimum period of five years, or fifty-seven months, must have a considerable amount of good luck; in other words, he must keep in good health through every term, and never fail at a single examination. Thus, for instance, before presenting himself for any examination he must be "signed up" for the subjects covered by that examination; this means that his teachers have to certify that he has diligently attended the required number of lectures or classes in the subjects in question. If, however, the student happens to be ill during the term when such lectures or classes are taking place he may miss enough of them to make it impossible for him to be signed up. Then, again, should he fail to satisfy the examiners at some examination, he cannot present himself for re-examination for at least three months. This generally entails further consequences, because, apart from the student's success at the next stage in his career being imperilled by the need for restudying the subjects in which he has failed, the Examining Boards usually insist upon a definite interval elapsing between one examination and the next. Further, many Boards have refused to recognize lectures and classes which have been attended before the student has passed the requisite examination in earlier subjects, and the Council now recommends that the professional examinations in anatomy and physiology be passed before the minimum period of three years' subsequent study be entered on. In other words, no clinical study should count as such until these examinations have been successfully completed. Failure at an examination may thus not only mean deferment of the date of examinations, but deferment of the beginning of the student's study of certain subjects. It is thus exceedingly easy for a student to fail to qualify in five years, and, as a fact, the majority of students take longer.

In speaking of the minimum period, it is to be remembered also that that time is only sufficient to gain a registrable qualification, such as a Bachelorship of Medicine or Surgery or the diplomas of the Royal Colleges. Those who wish to take a higher qualification—for instance, the F.R.C.S.Eng.—must prolong their work for another year or more. So, too, must in some cases those who desire to convert their Bachelorship into a Doctorate. This may entail further formal examination, but at some universities the M.D. is obtainable on presentation of a thesis when the Bachelor has attained a certain age and has practised for a certain number of years. However, a student's career proper may be considered, perhaps, to have ended when he obtains his first registrable qualification, for while preparing himself for any further tests he can, and usually does, hold some junior appointment which more or less covers his expenses.

MEMORANDUM ON STUDENTS' REGISTRATION.

The following memorandum has been drawn up by the Registrar of the General Medical Council as to the procedure for those who desire to be registered as medical or dental students.

The requirements for the registration of medical and dental students are the same, and every intending student should, in his own interest, register as soon as he commences his professional curriculum.

A recognized examination in general education must first be passed. If the student intends to obtain a university degree, he should apply to the university he selects for information as to its matriculation requirements in arts or pure science, or as to any examinations which may be accepted in lieu of its matriculation examination. If the student intends to obtain a qualification from one of the licensing corporations (these are the Conjoint Boards in England, Scotland, and Ireland, the Society of Apothecaries of London, and the Apothecaries' Hall of Dublin), any of the examinations indicated below will be accepted. The subjects required are (1) English, (2) Mathematics (elementary), (3) a language other than English, and (4) an additional subject or subjects, as required by the regulations of the particular examination, to be chosen from the following—namely, History, Geography, Physical Science, Natural Science, Latin, Greek, Hebrew, French, German, or other language accepted by the university for matriculation.

The requirements of the preliminary examination in general education being satisfied, it is then necessary to pass an examination in Elementary Chemistry and Elementary Physics, which is conducted or recognized by one of the licensing bodies—that is, university or corporation. The student should write to the body whose qualification he desires to obtain (a list will be found below) for information in regard to its requirements for this examination.

These two examinations having been passed and the student having attained the age of 17 years, he should apply to one of the universities or one of the medical schools for admission

order to commence therein his professional curriculum. Immediately his course of medical study has been begun, he should apply to the Dean of the school, or to the Registrar of one of the branches of the General Medical Council, for a form of application for registration as a student, and should have it completed and sent in to one of the Branch Councils as soon as possible. There is no fee for this registration. The medical curriculum will extend for at least five years, and the dental curriculum for at least four years, from the date of registration as a student.

A student who has studied the subject of elementary biology at an institution recognized by one of the licensing bodies may, if the body sees fit, be admitted to the professional examination in this subject immediately after his registration as a student. For information in regard to this, he should apply to the body whose medical qualification he seeks.

A Dental Student may commence his curriculum, if he so desires, as a pupil with a registered dental practitioner; but it is desirable, if possible, that he should commence professional study at a dental school. If, however, he is apprenticed to a dental practitioner, he may have to take out a course of four years of dental mechanics, and this will have the effect of lengthening the duration of his curriculum to five or six years instead of four.

The addresses of the Branch Registrars are:

General Medical Council, 44, Hallam Street, Portland Place, London, W.1.
Scottish Branch Council, 20, Queen Street, Edinburgh.
Irish Branch Council, 35, Dawson Street, Dublin.

Examining Bodies in Preliminary Education.

The following is a list of the officials of the examining bodies in preliminary education, with the names of the examinations—in parentheses.

Registrar, Queen's University of Belfast, Belfast. (Matriculation.)
Registrar, The University, Bristol. (Matriculation, School Certificate, or Higher School Certificate.)
Assistant Registrary, The University, Cambridge. (Previous.)
Secretary, Cambridge Local Examinations, Syndicate Buildings, Cambridge. (School or Higher School Certificates.)
Director, Central Welsh Examination Board, Cardiff. (Senior Certificates.)
Registrar, University of Dublin School of Physic, Dublin. (Junior Freshman, Special Preliminary, Junior Exhibition, or Examination for first, second, third, or fourth year in Arts.)
Dean, University of Durham School of Medicine, Newcastle-on-Tyne. (First School Certificate or Matriculation.)
Registrar, Irish Conjoint Board, Royal College of Surgeons, Dublin. (Preliminary Examination.)
Registrar, National University of Ireland, Dublin. (Matriculation.)
Joint Commissioners, Intermediate Education Board of Ireland, 1, Hume Street, Dublin. (Middle and Senior Grade Examinations.)
Academic Registrar, The University of London, South Kensington, London, S.W.7. (Matriculation or General Schools Certificate.)
Secretary, Northern Universities Joint Matriculation Board, 315, Oxford Road, Manchester. (Matriculation or Senior School Certification.)
Registrar, The University, Oxford. (Responsions or Moderations.)
Secretary, Oxford and Cambridge Schools Examination Board, Schools Examination Office, Balliol College, Oxford. (School or Higher School Certificate.)
Secretary, Oxford Local Examinations, University Press, Oxford. (School or Higher School Certificate.)
Secretary, College of Preceptors, Bloomsbury Square, London, W.C.2. (Senior Certificate.)
Secretary, Educational Institute of Scotland, 47, Moray Place, Edinburgh. (Preliminary Medical Examination.)
Secretary, Scottish Education Department, 14, Queen Street, Edinburgh. (Leaving Certificate.)
Secretary, Scottish Universities Entrance Board, 81, North Street, St. Andrews. (Scottish Universities Preliminary Examination.)

Licensing Bodies.

The following is a list of the officials of the various licensing bodies, to whom communications should be addressed:

Secretary, English Conjoint Board, 8, Queen Square, Bloomsbury, W.C.1.
The Clerk, Society of Apothecaries, Blackfriars, E.C.4.
Registrar, The University, Oxford.
Registrary, The University, Cambridge.
Secretary, University of Durham School of Medicine, Newcastle-on-Tyne.
The Principal, University of London, South Kensington, S.W.7.
Registrar, Victoria University, Manchester.
Registrar, The University, Birmingham.
Registrar, The University, Liverpool.
Registrar, The University, Leeds.
Registrar, The University, Sheffield.
Registrar, The University, Bristol.
Registrar, University of Wales, Cathays Park, Cardiff.
Secretary, Scottish Conjoint Board, 49, Lauriston Place, Edinburgh.
Dean of the Faculty of Medicine, The University, Edinburgh.
Registrar, The University, Glasgow.
Secretary of the Medical Faculty, The University, Aberdeen.
Secretary, The University, St. Andrews.
Secretary, Irish Conjoint Board, Royal College of Surgeons, Dublin.
Registrar, Apothecaries' Hall of Ireland, 95, Merrion Square, Dublin.
Medical Registrar, The University of Dublin.
Registrar, National University of Ireland, Dublin.
Registrar, Queen's University of Belfast, Belfast.

Medical Schools.

The following is a list of officials of the Medical Schools of Great Britain and Ireland, other than the universities.

Secretary, University of Durham College of Medicine, Newcastle-on-Tyne.
Dean of the Medical School, St. Bartholomew's Hospital, London, E.C.1.
Dean of the Medical School, Charing Cross Hospital, W.C.2.
Dean of the Medical School, St. George's Hospital, S.W.1.
Dean of the Medical School, King's College, Strand, W.C.1.
Dean of the Medical School, King's College Hospital, S.E.5.
Dean of the Medical School, London Hospital, E.1.
Dean of the Medical School, St. Mary's Hospital, W.2.
Dean of the Medical School, Middlesex Hospital, W.1.
Dean of the Medical School, St. Thomas's Hospital, S.E.1.
Dean of the Medical School, University College Hospital, W.C.1.
Dean of the Medical School, Westminster Hospital, S.W.1.
Dean of the Medical School, Royal Free Hospital, London, W.C.1.
Secretary, Bedford College for Women, London, N.W.1.
Secretary, Royal Holloway College, Virginia Water.
Dean of the Medical School, University College, Aberystwyth.
Dean of the Medical School, University College, Bangor.
Dean of the Medical School, Welsh National School of Medicine, Cardiff.
Dean of the Medical School, University College, Swansea.
Dean of the Medical School, University College, Dundee.
The Mistress, Queen Margaret College, Glasgow.
Registrar, School of Physic, Trinity College, Dublin.
Registrar, University College, Cork.
Registrar, University College, Dublin.
Registrar, University College, Galway.

PROFESSIONAL EXAMINATION.

The Council's Recommendations.

The following Recommendations of the General Medical Council in regard to professional examinations for medical and surgical qualifications were adopted in May, 1922:

1. In order to secure due continuity and sequence in medical study, two or more Professional Examinations in the earlier subjects should be held antecedently to the Final Examination in Medicine, Surgery, and Midwifery.

2. Three years at least should intervene between the date of passing the Professional Examination in Anatomy and Physiology and that of admission to the Final Examination in Medicine, Surgery, and Midwifery.

3. A candidate remitted in any subject of a Professional Examination should, before he is readmitted to examination therein, be required to produce satisfactory evidence that he has, during the interval of remission, pursued the study of the subject in which he was rejected. Candidates who obtain less than 30 per cent. of the marks in any subject should be remitted for a longer period than three months.

4. In all the Professional Examinations sufficient time should be assigned to practical work, in order to test the thoroughness of the candidate's knowledge and to encourage practical methods of study.

5. Candidates in all their examination work should be carefully supervised.

6. Two examiners should always participate in the oral examination of a candidate, except in subordinate parts of practical examinations.

7. In all written examinations the questions in each subject should be submitted for the approval of all the examiners in that subject.

8. In all written examinations an average of at least half an hour should be allowed for a candidate to answer each question.

9. It is desirable that examiners, and in particular those for the Final Examination in Medicine, Surgery, and Midwifery, should be appointed or re-elected for at least three consecutive years.

10. Whatever may be the system of marking, the percentage for a pass in each subject should be not less than 50.

11. In the regulations for the several examinations it should be provided that examiners, in assessing marks, be empowered to take into account the duly attested records of the work done by the candidate throughout his course of study in the subject of the examination.

12. The Final Examination in Medicine, Surgery, and Midwifery, with the exception of the Clinical and Practical Examination in Midwifery and Gynaecology, must not be passed before the close of the fifth academic year of medical study.

13. The three portions of the Final Examination in Medicine, Surgery, and Midwifery should not be further subdivided into sections which may be entered for or passed separately.

14. Compensation in respect of marks as between the three different portions of the Final or Qualifying Examination—namely, Medicine, Surgery, and Midwifery—is contrary to the intention of the Medical Act (1886).

15. The Final Examination should include clinical and practical examinations in Midwifery and Gynaecology.

16. The clinical examination in Medicine, Surgery, and Midwifery should be held in properly equipped hospitals or examination halls well provided with suitable patients.

17. In the examinations in clinical medicine at least one hour, and in clinical surgery at least half an hour, should be allowed to the candidate for the examination of, and report on, his principal case.

18. In Medicine, in Surgery, and in Midwifery, no candidate should be allowed to pass who fails to obtain 50 per cent. of the aggregate marks assigned to the whole examination; or who fails to obtain 50 per cent. of the marks assigned to the clinical examination; or who fails to obtain 40 per cent. of the aggregate of the marks assigned to the written and oral examination. In Midwifery, where a clinical examination is not held, the duly attested records of the work done by the candidate in clinical midwifery

must be presented to the examiners for assessment in the Final Examination; and no candidate should be allowed to pass who fails to obtain 50 per cent. of the aggregate marks assigned to Clinical and Practical Midwifery and Gynaecology.

19. The Final Examination should include the examination of secretions, the testing of urine, clinical microscopy, and prescription writing, and there should always be an oral examination in Medicine, Surgery, and Midwifery, which should include an examination on pathological specimens.

20. At the Final Examination each candidate should be submitted to a practical and oral examination in Pathology (macroscopic and microscopic), unless this has been included in a Professional Examination preceding the Final Examination.

21. Whatever be the method of entry for the Final Examination all candidates should be required to complete the three portions of the Final Examination within a period of nineteen months.

The English Universities.

THERE are eleven universities in England and Wales, and some account of each of them follows. They all have now fully developed medical faculties. Until recently the only exception was the University of Wales, whose constituent colleges are those of Aberystwyth, Bangor, Cardiff, and Swansea. This university grants degrees, and has laid down a six years' curriculum for candidates for the M.B. and B.Ch. degrees, and it now provides, at the Welsh National School of Medicine at Cardiff (see page 364), instruction in all the subjects of the medical curriculum.

UNIVERSITY OF OXFORD.

THE professional degrees conferred by this university are those of Bachelor of Medicine (B.M.), Bachelor of Surgery (B.Ch.), Doctor of Medicine (D.M.), and Master of Surgery (M.Ch.). It also grants a diploma in Public Health and a diploma in Ophthalmology. On receiving the B.M. the candidate is entitled to registration by the General Medical Council. In favourable circumstances this degree and the B.Ch. may be obtained in six or seven years from matriculation. Before receiving either, the candidate must have taken a degree in Arts (B.A.), for which three years' residence within the university is necessary. This, however, does not necessarily mean deferment of professional study for that period, for some of the subjects chosen for the final stage of the arts course may be the same as those in which examinations would in any case have to be passed for the medical degrees.

In accordance with a statute which came into force on October 7th, 1920, women may be matriculated and admitted to degrees in the university. The statute is retrospective under certain conditions. Before matriculation a woman must have been admitted as a member of one of the five societies of women students (Lady Margaret Hall, Somerville College, St. Hugh's College, St. Hilda's Hall, or the Society of Oxford Home Students). Women members of the university are admitted to all degrees, except those in Divinity, under the same conditions as those laid down for men in regard to examinations, courses of study, and fees, and under corresponding conditions as to residence at the university. Among the university diplomas open to women are those in anthropology, ophthalmology, and public health.

A candidate may obtain the B.A. degree in either of the following ways, of which the latter constitutes the normal course for medical students:

(*a*) By passing Responsions (or one of the examinations which are accepted as equivalent), Moderations, a Scripture examination, or, in the event of a candidate objecting, an examination on some substituted book; and the Final Pass School in three subjects, two of which may be the same as two of the preliminary examinations in natural science.[1]

(*b*) By passing Responsions, the Scripture examination, some of the preliminary examinations in the Natural Science School,[1] or the Honour School of Mathematics in the first public examination; and one of the final honour examinations. The Final Honour School of Natural Science (Physiology) is that usually taken.

[1] The four subjects of the medical preliminary examinations are four of the subjects in the natural science preliminary, and can be commenced directly after passing Responsions

Responsions and the preliminary examinations in Natural Science may be passed before a candidate is a member of the university[1]; Moderations and Scripture can be passed in or after the second term; the final pass school may be taken any time after Moderations; a final honour school may be taken at the end of the third or fourth academical year—that is, within nine or twelve terms respectively; the preliminary examinations of the Natural Science School may be taken as soon as Responsions have been passed.

PROFESSIONAL DEGREES.

To obtain the B.M., B.Ch. degrees the candidate must first pass in four of the subjects of the Preliminary Examination of the Natural Science School—namely, physics, chemistry, zoology, and botany.

He then has two further examinations to pass—the First B.M. and the Second B.M. These take place twice a year, the first on the Thursday, the second on the Wednesday, of the eighth week of Michaelmas and Trinity terms. Every candidate at the First B.M. is examined in human anatomy, in physiology, and in organic chemistry, but is excused from physiology if he has obtained a first or second class in the Honour School of Physiology, and from organic chemistry if he has satisfied the Examiners in Part I of the Honour School of Chemistry. Once he has passed this examination he can, on production of certain certificates, be examined as soon as he pleases in pathology, forensic medicine, and hygiene, materia medica, and pharmacology (subjects of the second examination), but cannot present himself for the remaining subjects—medicine, surgery, and midwifery—until the eighteenth term from the day of his matriculation, and not until a period of at least twenty-two months has elapsed from the date of his passing the first examination,[2] and he must take all the three subjects at one and the same time.

Before admission to the second B.M. examination the student must produce certificates of instruction from a medical school recognized by the university of having acted as clinical clerk and dresser, each for six months, and as *post-mortem* clerk for three months, of attendance on labours, of instruction in infectious and mental diseases and ophthalmology, and of proficiency in vaccination and the administration of anaesthetics.[3] He must also produce certificates of attendance in laboratory courses in pathology, bacteriology, and pharmacology, either in Oxford or in a recognized medical school.

D.M. AND M.CH. DEGREES.

A Bachelor of Medicine who wishes to proceed to the D.M. must have entered his thirtieth term and must present a dissertation for approval by the appointed examiners on a subject previously approved by the Regius Professor of Medicine. If a candidate for the M.Ch. he must have entered his twenty-first term and must pass an examination, which is held in June.

Examinations for the Diploma in Public Health are held in Trinity and Michaelmas terms; that for the Diploma in Ophthalmology is held annually, commencing on the third Monday in July. For the Diploma of Ophthalmology attendance on a twelve months' course of clinical ophthalmology in hospitals or institutions recognized for the purpose by the Board of the Faculty of Medicine, and on a course of instruction in Oxford lasting two months, is obligatory. Candidates must have their names on the *Medical Register* of the United Kingdom, unless, being Bachelors or Doctors of Medicine of universities outside the United Kingdom, they have obtained special permission from the Board of the Faculty of Medicine.

TEACHING.

The several colleges provide their undergraduate members with tutors for all examinations up to the B.A. degree. In addition, the university provides certain courses of instruction, including lectures, demonstrations, and practical work, which cover all the subjects of the Preliminary Examination and First B.M., and in part those of the Final Examination.

[1] Membership is constituted by matriculation and by becoming either a member of a College or a Hall or a non-collegiate student.

[2] For students commencing medical study after December 31st, 1922, this period will be thirty-three months.

[3] For the certificates that will be required from candidates amenable to the new Regulations of the General Medical Council, see *Examination Statutes*, Clarendon Press, Oxford, 1923 edition (in the press).

Scholarships.

Most colleges grant scholarships open to intending medical students of £80 a year, tenable for four years, in natural science, chemistry, physics, and biology. Exhibitions of varying value are also awarded in these subjects. At two colleges (University and Pembroke) there are medical entrance scholarships of £100 a year. Particulars can be obtained on application to the college tutors. Scholarships for women are also offered by the various women's colleges, from the principals of whom details of the examinations may be obtained. A Radcliffe Travelling Fellowship of £300 a year, tenable for two years, is conferred annually; candidates must have taken the B.M. degree. A Philip Walker Studentship in Pathology of £200 a year, tenable for two years, is awarded biennially for the encouragement of research in pathology, as also are the Rolleston Memorial Prize and the Radcliffe Prize (£50), for research in natural science (including pathology), and the three Theodore Williams Scholarships in Anatomy, Physiology, and Pathology, of the value of £50 each, tenable for two years. A Radcliffe Scholarship in Pharmacology of £50 for one year, open to the University, is awarded annually by the Master and Fellows of University College. A Burney Yeo King's College Hospital Scholarship of £80 is awarded annually.

Fees.

An annual fee of £4 10s. is paid to the university for the first four years, being reduced to £1 when the B.A. has been taken. For the degree the fees are: the B.A., £7 10s.; the B.M. and B.Ch., £14; the D.M., £25; the M.Ch., £12. College fees, varying in amount, are paid for the first four years of membership and in taking degrees. Tuition fees vary from £21 to £30. The minimum annual cost of living during the three university terms may be regarded as not less than £180, or for women not less than £140.

For further information application may be made to Dr. E. W. Ainley Walker, Dean of the School of Medicine, University of Oxford.

UNIVERSITY OF CAMBRIDGE.

The professional degrees given by this university are those of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.Ch.), each of which entitles the possessor to admission to the *Register* by the General Medical Council, and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants diplomas in Tropical Medicine, in Public Health, in Hygiene, in Psychological Medicine, and in Medical Radiology and Electrology to medical practitioners, not necessarily graduates of the university. Information regarding these diplomas will be found in later sections under the headings Tropical Medicine, Psychological Medicine, Public Health, and Radiology. A candidate for the M.B., B.Ch. degrees need not possess a degree in arts; it is sufficient if he has passed the previous examination or some other examination accepted by the university as its equivalent. Most students, however, are advised to take the B.A. degree, preferably by obtaining honours in the Natural Sciences Tripos at the end of their third year. Under the new regulations the attainment of a sufficient standard in chemistry or in physiology in this Tripos will secure exemption from the corresponding tests in the second M.B. examination. Women students, members of Girton or Newnham College, are now admitted, under certain conditions, to the first and second M.B. examinations.

New regulations for degrees in medicine and surgery come into force in October, 1923.

Professional Examinations.

To obtain the M.B. degree the candidate must pass three examinations; those who are finally successful may receive the B.Ch. degree (which is a complete registrable qualification) without further examination.

First M.B.—This comprises (1) general and inorganic chemistry, (2) mechanics, (3) physics, (4) elementary biology. The parts may be taken together or separately. In either case the candidate before admission to examination must have satisfied the requirements in respect of the previous examination and paid the matriculation fee. Certain exemptions from the first M.B. examination are allowed; the regulations may be obtained from the Registrary. The complete examination is held twice a year—in October and June; an additional examination, in parts 2 and 4, is held in December.

Second M.B.—This examination, which cannot be passed until the first examination has been completed, comprises Part I, organic chemistry; Part II, human anatomy and physiology; Part III, elementary pharmacology, including pharmaceutical chemistry and the elements of general pathology. No one may enter Part III unless he has passed Parts I and II. The candidate must be signed up in all three subjects and have dissected for one academic year. The examination for Parts I and II is held in December and June; that for Part III in October and April.

Third M.B.—This is divided into two parts, to neither of which is the candidate admitted until he has passed the examinations previously mentioned. A candidate for the first part, which deals with the principles and practice of surgery (including special pathology) and midwifery and diseases peculiar to women, must have completed five years of medical study and be signed up in these subjects and have completed two years and a half of hospital practice. Before admission to the second part the candidate must have completed five years of medical study, and be duly signed up in all subjects and have completed three years of hospital practice. He must also possess certificates showing that he has fulfilled all the recommendations as well as the requirements of the General Medical Council. The examination is in the principles and practice of physic (including diseases of children, mental diseases, and medical jurisprudence), pathology (including hygiene and preventive medicine), and pharmacology (including therapeutics and toxicology). The third M.B. examinations are held twice a year—in June and December.

Act for the M.B.—Before receiving his M.B. degree a candidate who has been successful at the final M.B. examinations has to write a thesis. This he reads in public on an assigned day, and is then questioned concerning it and other subjects of medicine by the Regius Professor of Physic. If approved at this test he is then certified as having "kept the Act" satisfactorily, and in due course receives his degree. Medical degrees may be taken in absence by those living abroad, the candidate sending to the Regius Professor of Physic a dissertation, which is laid before the Degree Committee.

The Higher Degrees.

The M.D. degree may be taken by a bachelor of medicine of three years' standing after writing a thesis approved by the M.D. Degree Committee, and keeping a further Act, at which he reads his thesis and is examined thereon. Previously to the Act being kept a topic taken from the general subject of his thesis (whether it be physiology, pathology, pharmacology, practice of medicine, State medicine, or the history of medicine) is submitted to the candidate, on which he is required to write an extempore essay.

The M.Ch. degree may be granted to a candidate who has qualified for the B.Ch. at least two years previously; he is then examined in pathology, surgery, surgical anatomy, and surgical operations. The tests are partly in writing, partly oral, and partly practical: they include the writing of an extempore essay.

Fees.

In addition to college fees, tutorial fees, and the expenses of living, the following examination fees are payable: First M.B., £5 5s.; Second M.B., £5 5s.; Third M.B., £10 10s. For schedules referring to the examinations, lists of schools recognized by the university, and other information, application should be made to the University Registrary, Cambridge.

UNIVERSITY OF LONDON.

Under the regulations of the University of London the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Surgery, Master of Surgery in two branches, and Doctor of Medicine in six different branches. The university has its own matriculation examination, and this is of so peculiar a kind that candidates should secure and carefully study the booklets relating to it. The matriculation examination is open to any person, of either sex, who has attained the age of 16. It is held in January, June, and September, and lasts four days; the first two take place both in London and in certain provincial centres; the September examination is held in London only.

In no circumstances is a degree granted to anyone in less than three years after the date at which he passed the Matriculation Examination or obtained registration in some

other way; and, unless they are already registered medical practitioners of a certain age and standing, all students must pass not less than five and a half years in professional study subsequent to matriculation.

PROFESSIONAL EXAMINATIONS.

M.B., B.S.—There are three examinations, the last two being subdivided. They are held twice a year.

The First Examination covers inorganic chemistry, general biology, and physics, there being two papers, a practical test, and a possible oral test in each subject. The names of successful candidates are placed in alphabetical order, with a note as to any subject in which a candidate has distinguished himself or herself.

The Second Examination, Part I, cannot be passed within six months of the passing of the First Examination. It covers organic and applied chemistry, the candidate's knowledge being tested as in the earlier examination. It is a pass examination, but a mark of distinction may be won. Candidates for Part II must have passed the First Examination at least eighteen months previously, besides having completed Part I of the Second Examination. The subjects are anatomy, physiology, and pharmacology, the tests being written, oral, and practical. Candidates who fail in one subject may sit for re-examination in that subject alone if the examiners think fit.

No candidate is admitted to the Third M.B., B.S. Examination within three academic years from the date of his completing the Second Examination. The subjects are medicine (including therapeutics and mental diseases), pathology, forensic medicine and hygiene, surgery, and midwifery and diseases of women. They may be divided into two groups, one comprising medicine, pathology, forensic medicine, and hygiene, and the other surgery and midwifery and diseases of women. Either group may be taken first at the option of the candidate, or the groups may be taken together. Only candidates who show a competent knowledge of all the subjects comprising a group are passed. There is no separate examination held for honours, but the names of successful candidates are divided into an honours list and a pass list, and a university medal may be awarded the candidate who has most distinguished himself in the whole examination.

THE HIGHER DEGREES.

M.D.—An examination for the M.D. is held twice yearly—in December and July. Every candidate must have passed the examination for the M.B., B.S., unless he became M.B. before May, 1904. He may present himself for examination in any one of the following branches: (1) Medicine, (2) pathology, (3) mental diseases and psychology, (4) midwifery and diseases of women, (5) State medicine, (6) tropical medicine, and, if he wishes, may pass also in another branch at a subsequent examination.

The period that must elapse between acquiring the M.B. and sitting for the M.D. in any branch varies between one and two years, according to the nature of the candidate's previous work, and in all cases evidence must be afforded of special study of the subject chosen; both written and practical examinations must be passed, though exemptions can be obtained from the former in exceptional circumstances. In each branch the scheme of examination is the same: two papers on its special subject, a paper on an allied subject—for example, medicine in the case of branch (4), pathology in branch (1)—an essay on one of two suggested topics connected with the special subject, and a clinical or other practical test. In any branch of the M.D. Examination a gold medal of the value of £20 may be awarded.

M.S.—The regulations with regard to the Mastership in Surgery are of a corresponding kind, but there are only two branches in which it may be obtained—General Surgery and Dental Surgery.

FEES.

The examination fees have been raised from pounds to guineas for all examinations held after September 1st, 1918. For Matriculation: 2 guineas for each entry. First Examination: 5 guineas for each entry to the whole examination. For re-examination in one subject the fee is 2 guineas. Second Examination, Part I: 2 guineas for the first and each subsequent entry. Second Examination, Part II: 8 guineas for each entry to the whole examination. For re-examination in one subject the fee is 4 guineas. M.B., B.S. Examination: 10 guineas for each entry to the whole examination, and 5 guineas for examination or re-examination in either group. M.D. and M.S. Examinations: 20 guineas, and 10 guineas on re-examination.

Inquiries should be addressed to the Registrar, the University of London, South Kensington, S.W.7.

UNIVERSITY OF BIRMINGHAM.

THIS university confers the ordinary medical and surgical degrees—M.B., Ch.B., M.D., and Ch.M.—and also diplomas and degrees in State medicine and dentistry. It has a plan, too, by which, extending his study to six instead of five years, the M.B., Ch.B. candidate may become a Bachelor in Science as well. Of the five years' curriculum, the first four must be spent, as a rule, at the university itself, the fifth being passed at any approved school or schools. Occasionally, however, the Senate will reduce the period of enforced residence to three years and exempt from the First M.B. (Part I) those who have passed elsewhere an examination considered to be its equivalent. A degree of Ph.D. is also conferred for research study in medicine under special regulations. Candidates must be graduates in medicine of a recognized university.

Students entering the Medical Faculty for the M.B., Ch.B. degrees must have passed—

(1) Either (*a*) the matriculation examination of the Joint Board of the Universities of Manchester, Liverpool, Leeds, Sheffield, and Birmingham; or (*b*) some other examination recognized as equivalent to the matriculation. Candidates for medical degrees are recommended to take Latin and a science subject—chemistry or physics—at the matriculation examination, although these subjects are no longer compulsory. The matriculation examination of the Joint Board is held in July and September. The regulations and the list of examinations accepted in lieu thereof will be sent on application to the Secretary to the Board, Joint Matriculation Board, 315, Oxford Road, Manchester.

(2) A recognized pre-medical examination in the subjects of chemistry and physics—for example, the Higher School Certificate of the Joint Matriculation Board; or a candidate may attend courses for pre-medical year in the university, October to June, taking chemistry and physics, and biology (optional).

PROFESSIONAL EXAMINATIONS.

The candidate for the M.B., Ch.B. degrees has five examinations to pass. In the second and final examinations the candidate must pass in all the prescribed subjects or undergo the whole examination again.

The First M.B. (Part I) deals with elementary biology, and physical and organic chemistry. The First M.B. (Part II) deals with anatomy and physiology, and the student must pass in both simultaneously. The Second M.B. deals with general pathology and bacteriology, materia medica, and practical pharmacy. The Third M.B. takes place at the end of the fourth year, the subjects being forensic medicine, toxicology, public health, therapeutics, and special pathology.

Final M.B.—This comprises medicine, surgery, midwifery and diseases of women, ophthalmology, and mental diseases. The candidate, in addition to more ordinary certificates, must be prepared with a certificate of having acted as a *post-mortem* clerk for three months, and received special instruction in anaesthetics and clinical instruction in diseases peculiar to women, asylum ward work, ophthalmology, venereal diseases, etc. In respect to ophthalmology he must show that he has learnt refraction work. He also has to present to the examiners reports by himself on six gynaecological cases, and certificates drawn up by himself regarding four actual cases of lunacy and notes on two others.

M.D.—An ordinary candidate for this degree must be a M.B., Ch.B., of not less than one year's standing. He presents an original thesis for approval, and then passes a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit. The regulations respecting the Ch.M. are of the same general character. Subject to certain requirements as to special research or other post-graduate study, graduates of other universities may obtain the M.D. and Ch.M. in the same way as holders of the Birmingham M.B., Ch.B.

FEES.

The fee for matriculation is £2, £2 10s. for pre-medical examination (if taken in university), and £2 10s. for each of the first four professional examinations; M.B., Ch.B. degree fee, £10; M.D. and Ch.M. examinations, £12 10s. each. For further particulars application should be made to the Dean of the Medical Faculty, University of Birmingham.

UNIVERSITY OF BRISTOL.

THE university grants the following degrees: In medicine and surgery, M.B. and Ch.B., M.D., Ch.M. (the M.D. may be taken in State medicine); in dental surgery, B.D.S., M.D.S. Diplomas in public health (D.P.H.) and dental surgery (L.D.S.) are also granted. Candidates for degrees must qualify for matriculation in the university by passing either one of the school certificate examinations held twice a year in July and in September by the university itself, or the *Higher School Certificate*, or any one out of a list of similar examinations which will be found in the university regulations for matriculation. Candidates over the age of 23 may, in certain circumstances, be permitted to matriculate without examination. The winter session opens on October 2nd, 1923.

Candidates who possess a *Higher School Certificate* approved by the Board of Education in physics, chemistry, and biology may count the first year of the curriculum and the first examination—the curriculum being thus reduced to four and a half years in the university.

PROFESSIONAL EXAMINATIONS.

M.B., Ch.B.—There are three examinations for these degrees. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. The first M.B. comprises chemistry, physics, botany, and zoology. The second M.B. comprises organic chemistry, elementary anatomy (Part I), advanced anatomy, physiology (Part II). The two groups may be taken separately or together. The Final Examination includes materia medica and pharmacy, pharmacology, and therapeutics, general pathology, morbid anatomy, and bacteriology (Part I), special pathology, forensic medicine, toxicology, and public health, obstetrics (including diseases of women), surgery (systematic, clinical, practical and operative), medicine (systematic, clinical, and practical), including mental diseases (Part II). The two groups may be taken separately or together. At the option of the candidate, forensic medicine and toxicology may be taken either with Group I or Group II. First or second class honours may be obtained by a candidate whose work is deemed of sufficient merit, but cannot be awarded to one who has recorded against him a failure at any examination after the first M.B.

M.D.—A candidate must be a M.B. and Ch.B. of at least two years' standing. He has a choice between presenting an original dissertation, undergoing a general examination in medicine (including medical anatomy, medical pathology and bacteriology, systematic and clinical medicine), or passing an examination in State medicine.

Ch.M.—A candidate must have attended, since becoming M.B., Ch.B., and for not less than two years, a public institution affording opportunities for the study of practical surgery, and produce certificates to that effect; the candidate shall be required to pass a general examination in surgery (including surgical anatomy, surgical pathology and bacteriology, operative and clinical surgery), and to present a dissertation in some department of surgery. He must be of two years' standing as a M.B., Ch.B. The degree is also awarded after examination in general surgery and in special subjects—for example, oto-rhino-laryngology, ophthalmology, and gynaecology.

Applications for other information should be addressed to the Dean of the Medical Faculty.

UNIVERSITY OF DURHAM.

To its own graduates, who may be of either sex, this university grants the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.), and Doctor of Medicine (M.D.), and Master of Surgery and Doctor of Surgery (M.S. and D.Ch.); it also grants special degrees and diplomas in Public Health, Psychiatry, and Dental Surgery. To become a graduate, however, at the university it is not necessary to pass the major portion of the five years' curriculum within its precincts, or even to commence that period by matriculation. It is sufficient if, before he presents himself for his final examination, the candidate has passed at least one year in study at the University of Durham College of Medicine, Newcastle-on-Tyne, including the practice of the Royal Victoria Infirmary in the same city. The earlier examinations may be passed while the student works elsewhere, but not less than a year must elapse between the date when the student satisfies the requirements of the university as regards matriculation and his presenting himself for the Final M.B., B.S. Examination.

The university has its own matriculation examination, but accepts the tests of a considerable number of other educational bodies as a full or partial equivalent. A list may be obtained on application.

PROFESSIONAL EXAMINATIONS.

There are four professional examinations for the M.B., B.S. degrees. Each is held twice a year—in March and June. The first deals with elementary anatomy and biology, chemistry and physics; the second with anatomy and physiology; the third with pathology, elementary bacteriology, medical jurisprudence, public health, materia medica, and pharmacy. At the final M.B., B.S., the candidate is examined in medicine and clinical and psychological medicine; surgery and clinical surgery; midwifery and diseases of women and children; clinical and practical gynaecology; therapeutics; diseases of the throat, nose, and ear; diseases of the skin; and diseases of the eye.

M.D.—A Bachelor of Medicine who wishes to proceed to this higher degree must be of at least two years' standing, and must comply with the regulations printed in the Calendar of the College of Medicine. If the candidate is not a M.B. of the university, he must be a practitioner of fifteen years' standing, 40 years of age, and submit to special tests. (See under Degrees for Practitioners, p. 383.)

M.S.—Candidates for this degree must have been engaged in practice for at least two years subsequent to becoming M.B., B.S.Durham. They are submitted to an examination which covers the whole range of surgical knowledge.

D.Ch.—The University grants also the Degree of Doctor of Surgery. Candidates for this degree must be registered medical practitioners, not less than 24 years of age. They must devote three years, subsequently to obtaining a registrable qualification, to the study of surgery and ancillary subjects; one at least of the three years must be spent in the university. The candidate must submit to the professor of surgery the course of study he proposes to follow, and this course must be approved by the Board of the Faculty of Medicine.

One year shall be devoted mainly to work in the departments of anatomy, physiology, pathology, and bacteriology, and the candidate must submit evidence of having so worked. Not less than six months of another year must be spent as resident surgeon in a recognized teaching hospital, and the rest of the year in the study of surgery in a recognized medical centre. Not less than six months of one of the three years must be spent in surgical study abroad.

FEES.

The following fees are payable: Matriculation or its equivalent, £2; First, Second, and Third M.B., B.S. Examinations, each £5; Final M.B., B.S., £15; M.D. and M.S., £5 for each examination and £12 12s. for the degrees of M.B. and B.S. The fee for the degree of M.D. is £10. The fee for the examination of D.Ch. is £20, and the fee for the degree £10.

Further information may be obtained from Professor Howden, Registrar, University of Durham College of Medicine, Newcastle-on-Tyne.

UNIVERSITY OF LEEDS.

THE degrees granted in the Medical Faculty of this university are Bachelor of Medicine, Bachelor of Surgery (M.B. and Ch.B.), and Bachelor of Dental Surgery (B.Ch.D.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), and Master of Dental Surgery (M.Ch.D.). It also gives diplomas in public health, in psychology, and in dental surgery.

Candidates for the M.B. must have attended courses of instruction approved by the university for not less than five

years, two at least of such years having been passed in the university, at least one year being subsequent to the date of passing the first examination. They must also have matriculated by satisfying the examiners in:

I. *Either* English Composition and English Literature, *or* English Composition and History.
II. *Either* Mathematics *or* Latin.
III. IV. V. *Three* other subjects not already taken under I and II above, chosen from the following list:

1. English Literature.
2. History.
3. Geography.
4. Greek.
5. Latin.
6. French.
7. German.
8. Some one other language approved by the Board.
9. Mathematics.
10. Mechanics.
11. Physics.
12. Chemistry.
13. General Experimental Science.
14. Natural History.
15. Botany.

Provided that (*a*) candidates who take Mathematics under II above must include one of the subjects 4—8; (*b*) candidates who take Latin under II above must include one of the subjects 9—15.

Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination.

Professional Examinations.

The examinations for the M.B., Ch.B. number three. The first deals with (1) physics and chemistry, (2) biology. In each subject laboratory work is included, but the two parts can be taken separately. For neither can the candidate present himself until after matriculation and a period of approved work in the respective subjects.

Second M.B.—This examination may be taken in two parts: (*a*) anatomy and physiology, including practical work; (*b*) materia medica and pharmacy, including actual compounding of drugs. The candidate's certificates must show, among other things, that he has dissected during at least five terms.

Final M.B.—This may be divided into three parts. The first (pathology and bacteriology) may be taken at the end of the tenth term; the second (forensic medicine and public health) and the third (medicine, surgery, obstetrics, and pharmacology and therapeutics) cannot be taken before the end of the fifth year; before admission to the examination in its subjects the candidate, besides ordinary certificates, must produce proof that he has done both intern and extern maternity work, and received clinical instruction in gynaecology, in diseases of the eye, skin, or larynx, and in the administration of anaesthetics. This division covers all branches of surgery, medicine (including mental diseases and diseases of children), and obstetrics and gynaecology. First and second class honours may be obtained in this division.

The regulations and curriculum are now under revision in accordance with recent recommendations of the General Medical Council.

M.D.—A candidate for this degree must be a M.B., Ch.B. of the university of at least one year's standing. He presents a dissertation embodying the results of personal observation or original research, and, if this is approved, he may be required to write a short extempore essay on some topic connected with medicine, and may be examined orally on the dissertation or other work submitted.

Ch.M.—The candidate for this degree must have been admitted to the M.B., Ch.B. of the university not less than a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery. He must also have attended certain courses, including one on ophthalmology and one on bacteriology; he is then examined on the subject of surgery in all its branches.

Fees.

The matriculation fee is £2, and on readmission £1 10s. For each of the other examinations £6 (£7 for Ch.M.); and £3 on readmission. On conferment of the degree of Ch.M. £7 is payable, and £6 for the M.D. degree.

UNIVERSITY OF LIVERPOOL.

This university, besides granting degrees in medicine (M.B. and M.D.) and in surgery (Ch.B., M.Ch.Orth., and Ch.M.), gives degrees in dental surgery (B.D.S. and M.D.S.), a degree in hygiene (M.H.), and degrees in veterinary science (B.V.Sc., M.V.Sc., and D.V.Sc.). Diplomas are awarded in dental surgery (L.D.S.), tropical medicine (D.T.M.), public health (D.P.H.), veterinary hygiene (D.V.H.), and medical radiology and electrology (D.M.R.E.).

Matriculation.

The Matriculation Examination is governed by the Joint Matriculation Board, 315, Oxford Road, Manchester, which accepts under certain conditions the test of several other bodies as its equivalent. The Faculty of Medicine has power to exempt from examination in corresponding subjects in the first M.B. examination any student who has obtained a certificate at a Higher School Certificate examination in the group including chemistry and physics, and who has reached a standard deemed satisfactory in the subject of exemption. Of the five years' curriculum, not less than two must be passed in the university itself, one such year being subsequent to the date of passing the first M.B. Examination.

Professional Examinations.

Candidates for the M.B., Ch.B. degrees have three examinations to pass, the first including (1) chemistry, inorganic, organic, and physical; (2) biology, including zoology and botany; (3) physics. Section 2 may be taken alone or in conjunction with Sections 1 and 3.

Second M.B.—This test covers (*a*) (1) anatomy, (2) physiology, including physiological chemistry and histology; and (*b*) (3) materia medica and pharmacy; (4) pharmacology. Candidates may present themselves in (*a*) and (*b*) separately.

Final M.B.—The subjects of the Final Examination are: (1) General pathology, morbid anatomy, and bacteriology; (2) forensic medicine, toxicology, and public health; (3) obstetrics and diseases of women; (4) surgery, systematic, clinical, operative, and practical, including ophthalmology; (5) medicine, systematic and clinical, including mental diseases and diseases of children and therapeutics. The examination is divided into three parts: Part I, subject 1; Part II, subject 2; Part III, subjects 3, 4, and 5. Candidates may present themselves for examination in the three parts at the same time, or in any two parts together, or in each part separately. Part III may not be taken until five years of study have been completed.

M.D. and Ch.M.—Candidates for these degrees must have received the M.B. and Ch.B. at least two years previously. Students holding equivalent degrees of other approved universities may become candidates for the M.D. degree after two years' study in the university or clinical school of the university. The M.D. candidate submits for approval a published thesis or a dissertation covering original work. The M.Ch. candidate undergoes an examination. Other information concerning the diplomas of this university and its medical school will be found on page 377.

Fellowships, Scholarships, and Exhibitions.

The university awards Fellowships annually to students of distinguished merit, as follows:

(1) John Rankin Fellowships in Anatomy; two, each of the value of £120, tenable for two years. (2) Ethel Boyce Fellowship in Gynaecology, value £100 and tenable for one year, open to fully qualified medical students of either sex. (3) John W. Garrett International Fellowship in Bacteriology, value £100 and tenable for one year. (4) Robert Gee Fellowship in Human Anatomy, value £100 and tenable for one year. (5) Holt Fellowships in Physiology and Pathology, two in number, value £100 each and tenable for one year. (6) Johnston Colonial Fellowship in Biochemistry, value £100 and tenable for one year. (7) Thelwall Thomas Fellowship in Surgical Pathology, value £150 and tenable for one year. (8) University Fellowship, £100.

There are, in addition, scholarships and exhibitions open to medical students.

VICTORIA UNIVERSITY OF MANCHESTER.

This university grants the four ordinary degrees in medicine and surgery, M.B. and Ch.B. and M.D. and Ch.M.; a diploma and a degree (B.Sc.) in public health; a certificate in factory and in school hygiene; a diploma in psychological medicine;

a diploma in bacteriology; and a degree and diploma in dental surgery. Candidates for degrees must pass the special Matriculation Examination prescribed by the Faculty of Medicine (or some equivalent examination accepted in lieu thereof; see the prospectus of the Joint Matriculation Board), and study at the university itself for at least two years of the six years' curriculum, one such year being subsequent to the passing of the first M.B. Examination. The Matriculation Examination comprises (1) Latin, (2) mathematics, (3) the English language, its literature and history; (4) two subjects at choice, one of which must be a language approved by the Joint Board, the other being elementary mechanics *or* physics, chemistry, geography, natural history, *or* botany. It is held in July and September.

Professional Examinations.

M.B., Ch.B.—There are four examinations for this degree. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. At all examinations the subjects, or groups of subjects, prescribed can be taken separately or together, as the candidate pleases. The first M.B. is divided into Part 1, chemistry and physics; Part 2, biology—(*a*) botany, (*b*) zoology. The parts may be taken separately or together. At the second M.B. the candidate is examined in anatomy and physiology; at the third in pathology and pharmacology (including materia medica and practical pharmacy). The Final Examination is divided into two parts, which may be taken separately, and includes medicine, systematic and clinical, mental diseases, and diseases of children, surgery (systematic, clinical, and practical), obstetrics and gynaecology, preventive medicine, forensic medicine and toxicology.

M.D.—A candidate for this degree must be a bachelor of medicine of at least one year's standing. He has a choice between presenting an original dissertation or undergoing a written (as well as practical and clinical) examination in medicine, and a written and practical examination in pathology, and one other subject selected by himself.

Ch.M.—A candidate must have held, since becoming Ch.B., and for not less than twelve months, a post in a public institution affording opportunity for the study of the branch of surgery in which examination is desired. The examination in Branch I comprises the general field of surgery; Branch II obstetrics and gynaecology; Branch III ophthalmology; Branch IV otology, laryngology, and rhinology.

Fees.

The following fees are payable: Matriculation, £2; on re-admission, £1 10s. Each M.B. examination, £8 8s.; on readmission, after failure, £3 3s. M.D., including the conferring of the degree, £15 15s. Ch.M., £6 6s. for the examination and £9 9s. for conferment of degree. Application for further information should be addressed to the Dean of the Medical Faculty.

UNIVERSITY OF SHEFFIELD.

The degrees of this university (M.B., Ch.B., M.D. and Ch.M., B.D.S. and M.D.S.), the diploma in public health, and the diploma of licentiate in dental surgery, are open to candidates of either sex. Candidates for a degree must have matriculated in the university or have passed such other examination as may be recognized for this purpose, and have passed the further examination in chemistry and physics.

Professional Examinations.

A candidate for the degrees of M.B., Ch.B. must produce certificates that he will have attained the age of 22 years by the day of graduation; that he has pursued the courses of study required by the university regulations during not less than five years subsequent to the date of his matriculation or exemption from matriculation, and the passing of the further examination in chemistry and physics, three of such years at least having been passed in the university, one at least being subsequent to the passing of the first examination. The following examinations must be passed in due order.

First Examination.—The subjects are chemistry, physics, and biology. The intermediate examination in science—chemistry, physics, and zoology—will, on payment of the required additional fee, be accepted instead of this examination. Candidates on presenting themselves for this examination are required to furnish certificates of having attended for not less than one year approved courses of instruction, after matriculation, and the passing of the further examination in physics and chemistry, in (i) chemistry, inorganic and organic; (ii) physics; (iii) biology.

Second Examination.—The subjects are anatomy and physiology. The candidate must have completed the second year of professional study, must have passed the First Examination, and must have attended (1) lectures on anatomy, and dissections during three terms; (2) lectures on practical, experimental, and chemical physiology and histology during three terms.

Third Examination.—The subjects are pathology and pharmacology, anatomy and physiology. Candidates must have completed the fourth winter of medical study and the requisite courses in these subjects, including *post-mortem* clerkship for three months.

Final Examination.—The subjects are medicine (including forensic medicine, public health, mental diseases, and diseases of children), surgery, and obstetrics (including gynaecology). Candidates must have completed the fifth year of study.

M.D.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, must present a thesis embodying observations in some subject approved by the Professor of Medicine, and must pass an examination in the principles and practice of medicine.

Ch.M.—Candidates for the degree of Master of Surgery must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, and must, since taking the degrees of M.B., Ch.B., have held for not less than six months a surgical appointment in a public hospital or other public institution affording full opportunity for the study of practical surgery. The subjects of examination are systematic, clinical, and operative surgery, surgical anatomy, surgical pathology, and bacteriology.

Other information concerning this university will be found in the section devoted to Provincial Medical Schools.

UNIVERSITY OF WALES.

The Charter and statutes of the University of Wales provide *inter alia* for a Faculty of Medicine and for the granting of the following degrees: Bachelor in Medicine (M.B.), Bachelor in Surgery (B.Ch.), Master in Surgery (M.Ch.), and Doctor in Medicine (M.D.).

A candidate for the M.B., B.Ch. is required to pursue a course of study of not less than six academic years subsequent to matriculation in the university, and of these years at least three must have been passed as a student in one of the constituent colleges of the university. These are the University College of Wales, Aberystwyth; University College of Wales, Bangor; University College of South Wales and Monmouthshire, Cardiff; and University College, Swansea. He must also hold an Arts or Science degree of the University of Wales, or of some other university approved for this purpose. Certain of the courses of study pursued for a B.Sc. or B.A. degree may be counted as part of the courses required for the degrees in the Medical Faculty.

The courses for the M.B., B.Ch. are divided into two sections, of which the first includes the preliminary subjects—physics, chemistry, botany, zoology; and the ancillary subjects—organic chemistry, human anatomy, and physiology. Study of the preliminary subjects and of organic chemistry must extend over at least one academic year; study of physiology and anatomy must extend over at least two academic years, and cannot be commenced until all the preliminary courses have been completed; hence the first section of the course must occupy not less than three years. The second section includes courses in pathology, bacteriology, pharmacology, medicine, surgery, and obstetrics and gynaecology, and cannot be commenced, except in the case of pharmacology, until the examinations relating to the preliminary and ancillary courses have been passed. Examinations in the earlier subjects are held at the end of each academic year, and in the subjects of the second section each July.

WELSH NATIONAL SCHOOL OF MEDICINE.

Students can complete the whole of their curriculum in the Welsh National School of Medicine, which is an integral part of the University College of South Wales and Monmouthshire, and qualify for the degrees of M.B., Ch.B. in the university.

Further information may be obtained from the Registrar, the University Registry, Cathays Park, Cardiff.

English Medical Corporations.

THERE are three medical corporations in England—the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the "Conjoint Board." Details concerning this body, its component Colleges, and the third licensing body here follow.

THE CONJOINT BOARD.

THIS body—the Examining Board in England—deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study, and recommends those who satisfy it for the Licence and for the diploma of Membership respectively. The successful candidate is then entitled to register as L.R.C.P.Lond., M.R.C.S.Eng. It performs the same task in connexion with diplomas in State medicine, tropical diseases, ophthalmic medicine and surgery, and psychological medicine, jointly issued by the two Colleges in question. Under the new regulations, which apply to all students who have not passed the required preliminary tests of general education before January 1st, 1923, every candidate for the M.R.C.S. and L.R.C.P. must (1) complete five years of professional study after passing a recognized preliminary examination and a recognized pre-medical examination in chemistry and physics; (2) comply with the regulations, which may be had from the Secretary, Examination Hall, 8-11, Queen Square, Bloomsbury, London, W.C.1; and (3) pass the two professional examinations of which particulars appear below. The old regulations for the Conjoint diploma, of which an account was given in last year's *Educational Number*, still apply to students who passed their preliminary examination in general education before January 1st, 1923.

NEW REGULATIONS FOR THE CONJOINT DIPLOMA.

The following is an outline of the regulations applicable to candidates for the L.R.C.P.Lond. and M.R.C.S.Eng., who passed the required Preliminary Examination in general education on or after January 1st, 1923. The full regulations and synopses and forms of certificate may be obtained from the secretary.

PRE-MEDICAL EXAMINATION.

Students are required to pass a Pre-Medical examination in Chemistry and Physics conducted by the Conjoint Examining Board before commencing the five years' curriculum of professional study or some other examination recognized by the Board—namely, the examination in Chemistry and Physics for the degree in Medicine of any university recognized by the Board, the Higher School Certificates of Oxford and Cambridge Universities and the Oxford and Cambridge Schools Examination Board, the Higher Certificates of London, Bristol, Durham Universities, and the Joint Matriculation Board of the Northern Universities.

A candidate must enter for Chemistry and Physics together and he will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other subject. He will be admitted to the examination on producing evidence of having passed the required Preliminary Examination in General Education and of having received instruction during 180 hours in Chemistry and 120 hours in Physics to the satisfaction of his teachers. These courses may be commenced or attended before the required Preliminary Examination in General Education is passed.

The examination is partly written, partly oral, and partly practical. A candidate rejected in one or both subjects of the examination will not be admitted to re-examination until after the lapse of a period of not less than three months and he must produce evidence of further instruction in the subject or subjects of failure.

PROFESSIONAL EXAMINATIONS.

There are two Professional Examinations called the First and Final Examinations. The courses of study for these examinations must not be commenced until the Pre-Medical Examination in Chemistry and Physics or some equivalent examination has been passed.

First Professional Examination.—The subjects of this are: Section I, (*a*) Anatomy, including Histology and Embryology; (*b*) Physiology, including Biochemistry. Section II, Pharmacology, Practical Pharmacy and Materia Medica. A candidate must have attended at a recognized Medical School courses of instruction in Anatomy, including Embryology, during five terms, during which he must have dissected the whole body, courses of instruction in Physiology, including General Biology, Biochemistry, and Biophysics, during five terms, courses of instruction in Pharmacology, Practical Pharmacy, and Materia Medica. A candidate may present himself for the two Sections together or separately, but he must take parts (*a*) and (*b*) of Section I together until he has passed in one or both parts, but a candidate will not be allowed to pass in one part unless he obtains at the same time at least half the number of marks required to pass in the other part. Section II of the examination may be passed at any time before the candidate enters for the Final Professional Examination. A candidate who produces satisfactory evidence of having passed an examination in the subjects of Section I or of either part of Section I and of Section II in the examination for the degree in Medicine conducted at a university recognized by the Board will be exempted from further examination in such subject or subjects.

Final Professional Examination.—The subjects of this are: Section I, (*a*) Pathology, including Morbid Anatomy, Morbid Histology, and Clinical Pathology; (*b*) Bacteriology. Section II, Part I, Medicine, including Medical Anatomy, Forensic Medicine, and Public Health; Part II, Surgery, including Surgical Anatomy and the use of Surgical Appliances; Part III, Midwifery and Gynaecology. The examination is partly written, partly practical, partly clinical, and partly oral. A candidate may take Sections I and II and the three parts of Section II of the Final Examination separately or may take the whole examination together. He will be required to produce the certificates required by the regulations before being admitted to the respective parts of the examination. A candidate who produces evidence of having passed an examination for a degree in Medicine in the subjects of Pathology and Bacteriology at a university recognized by the Board is exempted from Section I.

FEES.

The fee for the *Pre-Medical Examination* is three guineas, for re-examination in Chemistry two guineas, and for re-examination in Physics one guinea. The fee for the *First Professional Examination* is ten guineas, for re-examination after rejection in Section I six guineas, for re-examination after rejection in either part of Section I three guineas, for re-examination after rejection in Section II three guineas. The fee for admission to Section I of the *Final Professional Examination* is four guineas, for admission to Section II, Part I, ten guineas, Part II ten guineas, Part III six guineas; and the re-examination fees are respectively three guineas, six guineas, and four guineas.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THIS College has three grades—its Licentiates, its Members, and its Fellows. The Licence is now only issued through the Conjoint Board. The Membership is only granted to those who have passed the final examinations for the Licence, or those who are registered practitioners and graduates of a recognized university; in any case they must be persons over 25 years of age. Candidates are examined in pathology and the practice of physic, partly in writing and partly viva voce; they are also examined in Latin, and either Greek, French, or German. The fee for the Membership is £42, or in the case of a Licentiate, £21. There is a fee of £6 6s., payable before entrance to the examination, which in the case of successful candidates is reckoned as part of the Membership fee. The body of Fellows is maintained by election from among the Members.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THIS College has two grades—Members and Fellows. The Members are admitted as stated in the section dealing with the Conjoint Board. The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations for the Fellowship—the first in anatomy and physiology, which may be passed after the third winter session; the second, chiefly directed to surgery, which may

be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of graduates in medicine and surgery of not less than four years' standing of universities recognized by the College for the purpose, who are required to attend for one year the surgical practice of a general hospital recognized by the College after obtaining their degrees.

Fees.—At first examination, £8 8s.; for re-examination, £5 5s. At second examination, £12 12s. Diploma fee for non-members, £10 10s.

The College also issues a diploma (L.D.S) in dentistry.

SOCIETY OF APOTHECARIES OF LONDON.

This body confers a registrable diploma in medicine, surgery, and midwifery, now known as the L.M.S.S.A. (Licentiate in Medicine and Surgery of the Society of Apothecaries), on those successful at the following examinations:

Primary Examination.—This is divided into two parts, of which Part I includes elementary biology, chemistry, chemical physics, practical chemistry, pharmacy. Part II includes anatomy, physiology, and histology, and cannnot be passed before the completion of twelve months' practical anatomy with demonstrations. Candidates will be excused any or all the subjects of the primary examination on producing evidence that they have passed equivalent examinations before an examining body recognized by the Society. Candidates referred in anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re-examination.

Final Examination.—This is divided into three parts. Part I includes clinical surgery, the principles and practice of surgery, surgical pathology, operative manipulation, surgical anatomy, instruments and appliances. Part II includes clinical medicine: (*a*) The principles and practice of medicine (including therapeutics, pharmacology, and prescriptions), pathology, and morbid histology; (*b*) forensic medicine, hygiene, theory and practice of vaccination, and mental diseases. Part III includes midwifery, gynaecology, and diseases of newborn children, obstetric instruments and appliances.

The fee for the primary examination is £5 5s.; for the final, £15 15s. The regulations and synopses relating to the several examinations, and other information, may be obtained from the Secretary, Court of Examiners, Apothecaries' Hall, Blackfriars, E.C.4.

The Scottish Universities.

There are in Scotland four universities, each possessing a faculty of medicine, and having the right to confer degrees which admit the holder to the *Medical Register*. In essential points the regulations in their medical faculties for undergraduates are much alike, so that a general account can be given of all of them together.

The universities are those of Edinburgh, Glasgow, Aberdeen, and St. Andrews. The provision each of the cities in which these universities are situated makes for the education of medical students will be found in the section on Medical Schools in Scotland; here it need merely be said that degrees in medicine from Scotland as a whole have always enjoyed a high repute.

The degrees granted in medicine and surgery to candidates of either sex are four in number—Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.). The two former are not obtainable one apart from the other. Besides these degrees a diploma in tropical medicine and hygiene is obtainable from the University of Edinburgh, as also diplomas in psychiatry and public health. As for public health, registrable degrees in this subject are granted by the Universities of Edinburgh and Glasgow, while diplomas in public health may be obtained from the Universities of St. Andrews and Aberdeen.

The conditions for admission of graduating students of medicine are the same as those in the Faculties of Arts or Science (for degrees in pure science).

As from January 1st, 1923, prospective medical students are also required to pass a pre-registration examination in chemistry and physics.

Professional Education.

The regulations comply in all respects with the requirements and recommendations of the General Medical Council, and in addition necessitate definite study for stated periods of diseases of children, of the larynx, ear and nose, of the skin, of ophthalmology, and of mental diseases. In respect of the various courses certificates must be obtained showing that the student has not only attended regularly, but has duly performed the work of the class. Out of the necessary five years of medical study, not less than two must be spent at the university whose degrees the student hopes to obtain, and the balance at any place officially recognized for such purpose. In each academic year there are two sessions—one lasting from the beginning of October to the middle of March, and the other from the beginning of May to the middle of July.

Professional Examinations.

The distinctive feature of the Scottish curriculum is that, though nominally there are only four examinations, each of these may be, and habitually is, split up by the student into sections. Hence, a student may complete some stage of his career during the course of nearly every session. Thus, by the end of the first winter session the student may pass in zoology and chemistry. At the end of the first summer session he can finish with botany and physics, and with anatomy and physiology at the end of the second. Pathology and materia medica he will pass at the end of the third year, and so on, until the final examination in midwifery, surgery, and medicine, and the corresponding clinical subjects at the end of the fifth year of study. At each examination the candidate may pass "with distinction," and a record is kept of the merit displayed, so that, when the time comes for the candidate to graduate, one who has done well throughout can be declared as graduating with first or second class honours. A further point in the system is that the student's own teachers commonly take some part in his examination.

Of the four examinations, the first deals with physics, botany, zoology, and chemistry; the second with anatomy and physiology; the third with materia medica and pathology; the fourth with medicine and surgery (clinical and systematic), midwifery, forensic medicine and public health, and clinical gynaecology. The first three examinations are held three times a year; the final twice a year.

Exemption from the first professional examination can be obtained by candidates who have passed an arts or science degree examination in its subjects at any recognized university. When a candidate presents himself for an examination in several of its parts, but is not successful in all of them, he is credited at the next examination with those subjects in which he has already been approved.

The Higher Degrees.

It is open to those who are already M.B., Ch.B. to proceed either to the M.D. or the Ch.M. A candidate for the former must have been engaged for not less than one year in work in the medical wards of a hospital, or in scientific research in a recognized laboratory, or in the Naval or Military Medical Services, or have been at least two years in general practice, and he must be 24 years of age. He has to write a thesis on any subject not exclusively surgical, and is examined in clinical medicine and in some one or other of its special departments. The regulations for candidates for the Ch.M. are of a corresponding character, a period of surgical work in a hospital or elsewhere being substituted for medical work, and the thesis being on a surgical rather than a medical subject. He is examined in surgical anatomy, clinical surgery, operative surgery, and in some of the special departments of surgery.

FEES.

It is estimated that the class, examination, and other fees for the M.B., Ch.B. come altogether to about £247, the separate examination fees included in this calculation being as follows:

	£	s.	d.
First Professional..	9	9	0
Second Professional	7	7	0
Third Professional	6	6	0
Final	11	11	0

Re-entry in any subject in which the candidate has failed entails a fresh payment of £1 1s. Candidates for the M.B. and Ch.M. pay £21, and on re-entry £5 5s.

More detailed information with regard to the University of Edinburgh can be obtained from the *Medical Programme*, price 6d., which is published by Mr. Thin, 55, South Bridge, Edinburgh, or on application to the Dean of the Faculty of Medicine. Similar information about Glasgow should be sought from the Assistant Clerk, Matriculation Office, Glasgow. With regard to Aberdeen, application may be made to the Secretary of the Medical Faculty, Marischal College. In respect of St. Andrews information can be obtained either from the Secretary of the University, or, alternatively, the Secretary of the United College, St. Andrews, or the Secretary of University College, Dundee, these being the two constituent colleges of the University of St. Andrews.

Finally, it should be mentioned that in connexion with all the Scottish universities there are valuable bursaries and scholarships, some information as to which will be found in the article on Medical Schools.

The Scottish Corporations.

THERE are three medical corporations in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Their licences can be separately obtained only by persons who are already in possession of a recognized qualification—in surgery in the case of the College of Physicians, and in medicine in the case of the College of Surgeons and the Faculty of Physicians and Surgeons of Glasgow. All others must submit to the examinations held by the Conjoint Board which the three corporations have combined to form. Details concerning this Board and its component colleges follow. The conditions on which their higher qualifications are granted will be found set forth separately in connexion with each corporation.

THE CONJOINT BOARD IN SCOTLAND.

THIS body has charge of all questions connected with candidates for the Conjoint Licences of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Those finally approved by it are entitled to registration and to the initials denoting the Licences of the three bodies concerned—namely, L.R.C.P. Edin., L.R.C.S.Edin., and L.R.F.P.S.Glasg. The Board requires all candidates to comply with the regulations of the General Medical Council. It has an arts examination of its own, but is prepared to accept in its place any of the other educational tests approved by the General Medical Council. All candidates must obtain registration with the General Medical Council.

Professional Curriculum for Candidates registered as Medical Students prior to January 1st, 1923.

Subsequent to registration as a medical student the candidate must pass not less than five years in medical study, each comprising a winter and a summer session. The Board does not insist that candidates shall pursue their study at any particular place, and is prepared to accept certificates of having attended the necessary courses from any recognized medical school.

Its examinations are four in number, each of them being held four times every year, and these will fall to be held twice in Edinburgh and twice in Glasgow during the next period; it is open to candidates to present themselves for examination at either place. The first examination deals with physics, chemistry, and elementary biology; the second with anatomy and physiology, including histology; the third with pathology and materia medica, including pharmacy; and the final with (1) medicine, including therapeutics, medical anatomy, and clinical medicine; (2) surgery, including surgical anatomy, clinical surgery, and diseases and injuries of the eyes; (3) midwifery and diseases of women and of newborn children; and, if it has not been passed previously, (4) medical jurisprudence and hygiene. Candidates may also be examined on diseases of children, diseases of the ear and throat, insanity, vaccination, etc.

These examinations must be passed in due order, and before admission to any of them the candidate must supply certificates showing that he has completed the due periods of study of their subjects. He can present himself in any single subject of the first three examinations. As regards the final examination, a candidate can present himself in medical jurisprudence and hygiene at any time after completion of the third examination and of his study of these subjects; but in medicine, surgery, and midwifery he cannot present himself until the completion of five years' study, and he must take them all simultaneously. A candidate who takes up several subjects of an examination or the whole of the subjects at one time, but fails in some of them, is credited at the next examination with those subjects in which he has been approved.

Part or entire exemption from the first three examinations may be granted to those who have already passed before other bodies examinations deemed by the Board equivalent to its own; but all candidates for the Conjoint licence must sit for the final examination, and at no examination can a candidate present himself within three months of his rejection by some other licensing body.

Professional Curriculum for Candidates registered as Medical Students after January 1st, 1923.

The curriculum has been extended to meet the recommendations of the General Medical Council. Candidates when applying for copies of regulations should state date of medical registration.

FEES.

It is estimated that the total cost of lectures and fees for the conjoint licence is about £152. The separate examination fees are as follows: First, Second, and Third Professional, £5 each; Final £15. On re-entry for any of the first three examinations £3, and on re-entry for the Final, £5. If the re-entry is only in one or two subjects the fees are smaller.

Information concerning this Board should be sought either from Mr. D. L. Eadie, 49, Lauriston Place, Edinburgh, or from Mr. Walter Hurst, Faculty Hall, 242, St. Vincent Street, Glasgow.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

THIS College has three grades—Licentiateship, Membership, and Fellowship—all of which are open to men and women. The regulations applying to candidates for the Licentiateship have already been generally indicated. If desirous of receiving it apart from those of the other two corporations they must be holders of a surgical qualification recognized by the College, and must pass an examination corresponding to the medical part of the Final Examination of the Conjoint Board, and conditioned in the same way, and also an examination in materia medica. The fee for examination is 15 guineas, a special examination being obtainable on due cause being shown, and on payment of 5 guineas extra. Ordinary examinations take place monthly on the first Wednesday, except in September and October. Candidates for the Membership must be either Licentiates of a British or Irish College of Physicians, or alternatively graduates of medicine of a university approved by the Council, and in either case not less than 24 years of age. Candidates are examined in medicine and therapeutics, and in one further subject at choice. This may be either (*a*) one of the departments of medicine specially professed; (*b*) psychology; (*c*) general pathology and morbid anatomy; (*d*) medical jurisprudence; (*e*) public health; (*f*) midwifery; (*g*) gynaecology; (*h*) diseases of children; or (*i*) tropical medicine. The fee to be

paid by a candidate for the Membership is £36 15s. The examination is held quarterly, and application for admission to it must be made a month previous to its date. For the Fellowship the candidate must have been a member of the College for at least three years, and, if accepted, pays fees, including £25 stamp duty, amounting altogether to £64 18s. Further details can be obtained on application to the Secretary of the College.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THIS College has two grades—its Licence and its Fellowship. Licentiates may be of either sex, and for the Fellowship women are eligible also.

Licence.

As an original qualification the Licence is only granted after fulfilment of the regulations of the Conjoint Board, but as an additional qualification it can be obtained by those already possessed of a registrable qualification in medicine. In this case the candidate has to pass a written, oral, and clinical examination in surgery and surgical anatomy, and may be asked to operate on the dead body.

The fee is £15 15s., of which £10 10s. is returned to unsuccessful candidates. On due cause being shown, a special examination may be granted, the fee being £20, of which £10 is returned to a candidate if he is not approved.

Fellowship.

Candidates for the Fellowship must be not less than 25 years of age, and have been in the practice or study of their profession subsequent to registration for at least two years, and must hold either a surgical degree from a university recognized for that purpose by the College, or a registrable diploma obtained as the result of an examination which includes surgery as well as medicine and midwifery. Candidates are examined in (*a*) the principles and practice of surgery, including surgical anatomy, (*b*) clinical surgery, and (*c*) one optional subject, which they may choose from among the following: surgical pathology and operative surgery, ophthalmology, laryngology, otology, and rhinology, gynaecology, obstetric surgery, anatomy, and dental surgery and pathology. The examination is written, oral, and clinical or practical. A candidate who desires to be examined must give one month's notice, his application for admission being supported by two Fellows of the College, one of whom must be resident in Edinburgh, or, in default, by testimonials obtained specially for the purpose. *Candidates are not allowed to appear more than three times at the examinations.*

Licentiates of the College pay £35, and others £45. For further information application should be made to the Clerk of the College, Mr. D. L. Eadie, 49, Lauriston Place, Edinburgh.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THIS body possesses two classes—Licentiates and Fellows. The regulations applying to the former correspond with those respecting candidates for the Licence of the Royal College of Surgeons of Edinburgh. Candidates for the single Licence are examined in surgery (including clinical surgery and surgical anatomy). The fee is £15 15s., and examinations are held quarterly. Candidates for the Fellowship must be qualified medical men of not less than two years' standing and 24 years of age. Candidates approved at this examination are then eligible for election as Fellows. Special regulations are in force for medical practitioners who served in the late war. The Faculty can also elect four Fellows annually without previously submitting them to examination, providing they "have highly distinguished themselves in medical science or practice." They must be of not less than ten years' standing and 40 years of age. Further information can be obtained from Mr. Walter Hurst, Faculty Hall, 242, St. Vincent Street, Glasgow.

The Irish Universities.

THERE are three universities in Ireland, each with a medical faculty. These are the University of Dublin (usually known as Trinity College, Dublin), the Queen's University of Belfast, and the National University of Ireland. The two former teach students, examine them, and grant degrees; while the third is an academic body only, inasmuch as its practical work is divided among three constituent colleges, situated, one at Cork, another at Galway, and the third in Dublin. Information as to the arrangements for the education of medical students will be found in the section relating to Irish Medical Schools.

UNIVERSITY OF DUBLIN: TRINITY COLLEGE.

THIS university grants two degrees in medicine (M.B. and M.D.), two in surgery (B.Ch. and M.Ch.), two in midwifery (B.A.O. and M.A.O.), and a post-graduate diploma in public health. It also grants a post-graduate diploma in gynaecology and obstetrics, for which one year's study is required. The degrees are granted to those who, having passed the Professional Examination, have also graduated in arts.

PROFESSIONAL EXAMINATIONS.

A candidate for the Final Examination for the M.B., B.Ch., and B.A.O. degrees must be a matriculated student of at least five years' standing. At least three of the five years' medical curriculum must be pursued at the School of Physic of the university. The examinations which students must pass are the Preliminary Scientific, the Intermediate Medical, and the Final. Before admission to any of these examinations students must have completed the courses of study in the subjects involved.

Preliminary Scientific.—This covers (*a*) chemistry, (*b*) physics, (*c*) botany and zoology; the three divisions may be taken together or at different times.

Intermediate Medical.—This is divided into two parts: (*a*) anatomy, physiology, organic chemistry, and histology; (*b*) applied anatomy and applied physiology. The two parts may be taken separately or together.

Final Examination.—Part I: Hygiene and medical jurisprudence, pathology and bacteriology, materia medica, and therapeutics. *Part II:* (*a*) Midwifery and gynaecology; (*b*) medicine and mental diseases; (*c*) surgery in all branches, including clinical ophthalmology. The three sections of Part II may be taken separately or together. In either case the full curriculum must have been completed, and the final examination cannot be completed before the end of the fifth year.

M.D.—The candidate must have passed all the qualifying examinations in medicine, surgery, and midwifery, and have taken, or have been qualified to take, the degree of B.A. three years previously. He must send in a thesis for approval. Subsequently the Regius Professor of Physic and an assessor will discuss with him questions connected with the thesis, and may also examine him viva voce on other medical subjects of a more general nature.

M.Ch.—The candidate must be a B.Ch. of not less than three years' standing, and have been engaged in practice for two years.

M.A.O.—The candidate must be a B.A.O. of not less than two years' standing and must produce satisfactory evidence of having been engaged for two years in obstetric science. The examination is specially directed to obstetrics and practical gynaecology.

Dental Degrees.—The University of Dublin gives two degrees in dental science—namely, B.Dent.Sc. and M.Dent.Sc. The course for the former has a minimum duration of four years; for the latter, five years.

Further information regarding courses of instruction, etc., may be obtained from the Registrar of the School of Physic, Trinity College, Dublin.

QUEEN'S UNIVERSITY, BELFAST.

THE degrees granted by the Medical Faculty of this university are as follows: Bachelor of Medicine (M.B.), Bachelor of Surgery (B.Ch.), Bachelor of Obstetrics (B.A.O.), Doctor of Medicine (M.D.), Master of Surgery (M.Ch.), Master of Obstetrics (M.A.O.). The university also confers a diploma in public health. The first three degrees mentioned serve as a qualification for admission to the *Medical Register*, and are not granted separately. In addition to matriculating and passing his professional examinations, a candidate for these degrees must have passed three of the regulation five years as a student at the Belfast School of Medicine. Degrees in dental surgery (B.D.S. and M.D.S.) are conferred by the university and also a diploma in dental surgery (L.D.S.).

PROFESSIONAL EXAMINATIONS.

The examinations for the M.B., B.Ch., B.A.O. are four in number. The first deals with: (1) Inorganic, organic, and practical chemistry, (2) experimental and practical physics, (3) botany and practical botany, (4) zoology and practical zoology. It is divided into two parts, of which botany and zoology form one. The Second Examination covers anatomy and physiology, and may be taken at the end of the second year of the student's career. The Third Examination includes: (1) Pathology, (2) materia medica, pharmacology, and therapeutics, (3) medical jurisprudence, and (4) hygiene. To be valid a certificate in regard to the study of the subjects of this examination must show that the work has been done after the First Examination has been passed.

The Final Examination includes: (1) Medicine, (2) surgery, (3) midwifery, (4) ophthalmology and otology. The student may pass in all subjects at once at the end of his fifth year, or he may divide the examination into two parts—namely, (1) systematic, (2) clinical, practical, and oral. The first part may be taken at the end of the fourth year, but for the second part the candidate may not present himself until the end of his fifth year, but students invariably take both parts at the end of their course. No certificate in regard to the study of the subjects of this examination will be valid unless the work was done subsequent to passing in all the subjects of the Second Examination.

THE HIGHER DEGREES.

Candidates for the degree of Doctor of Medicine must be graduates in medicine of at least three years' standing, unless they hold also a degree of the university in arts or science, in which case a standing of two academic years will suffice. Moreover, candidates must be able to show that the interval has been passed in the pursuit of such courses of study or practical work as may be prescribed. The degree may be conferred either (*a*) after a formal examination, or (*b*) in recognition of the merits of a thesis or of some piece of original study or research carried out by the candidate, followed by an oral or other examination in its subject. When an ordinary examination is imposed it will include (1) a written paper on the principles and practice of medicine, (2) a commentary on a selected clinical case, (3) a clinical and viva voce examination, and (4) a written paper and clinical or practical and viva voce examination on a subject chosen from the following list: (*a*) Human anatomy, including embryology, (*b*) physiology, (*c*) pathology, (*d*) pharmacology and therapeutics, (*e*) sanitary science and public health, (*f*) forensic medicine and toxicology, (*g*) mental diseases. The regulations for the degrees of M.Ch. and M.A.O. are of the same general nature.

NATIONAL UNIVERSITY OF IRELAND.

THE National University of Ireland carries on most of its educational work through three constituent colleges—one in Dublin, one in Cork, and one in Galway. Each of these provides a full medical curriculum, and all candidates for the medical degrees of the university must pass three of their five years of study at one or other of them. These years do not count except after matriculation or recognition as a student of the Medical Faculty obtained in some other fashion. The candidates at each constituent college are examined thereat by the university, and a common standard of education is secured by all courses of instruction and the regulations concerning them having to be approved by the Senate, after considering report thereon from the Board of Studies of the university. In addition to the ordinary degrees in medicine and surgery, the university grants those of Bachelor and Master of Obstetrics, Bachelor and Doctor of Science in Public Health, and Bachelor and Master in Dental Surgery, as well as diplomas in Public Health, in Mental Diseases, and in Tropical Medicine.

Application for other information may be made to the Registrar, National University of Ireland, Dublin.

The Irish Corporations.

THERE are three licensing bodies other than the Medical Faculties of the Universities, and in Dublin, just as in London, there is a Royal College of Physicians of Ireland, a Royal College of Surgeons in Ireland, and an Apothecaries' Hall. In Ireland, as in England, the two Colleges have formed an examining Conjoint Board, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall of Ireland, like the Apothecaries' Society of London, gives its licence separately.

THE CONJOINT BOARD IN IRELAND.

THIS body requires of candidates the passage either of its own preliminary examination in the subjects of general education or proof that the candidate has passed one of the tests accepted by the General Medical Council.

PROFESSIONAL EXAMINATIONS.

There are four professional examinations, the first of which cannot be passed earlier than the end of the first winter session, nor the fourth before the conclusion of full five years of medical study. Before being admitted to any of them the candidate must show that he has studied the different subjects in practice and theory for the requisite periods, certificates to this effect being accepted from the authorities of most of the recognized medical schools at home and abroad. The first and second examinations deal respectively with (*a*) chemistry and physics, and (*b*) biology; and (*a*) anatomy, and (*b*) physiology and histology. All parts of these examinations, as also of the following one, which deals with (*a*) pathology, (*b*) materia medica, pharmacy, and therapeutics, (*c*) public health and forensic medicine, may be taken separately.

Final Examination.—This is divided into three divisions, which cannot be completed until at least four years have passed in medical studies other than those for the first examination, and five years at least since the beginning of the curriculum. The divisions are (*a*) medicine, including fevers, mental diseases, and diseases of children; (*b*) surgery, including ophthalmic and operative surgery; (*c*) midwifery, including diseases of women and newborn children, and the theory and practice of vaccination. Candidates are recommended to present themselves in all the subjects of the Final Examination at one time, but a candidate at or after the end of the fourth year may present himself in any one of the divisions (*a*), (*b*), or (*c*), provided he has completed his curriculum as far as concerns the division in which he presents himself.

Fees.—Preliminary Examination, £2 2s.; re-examination, £1 1s. First Professional Examination, £15 15s.; Second, £10 10s.; Third, £9 9s.; Final, £6 6s.; re-examination fee is £2 2s. for each division.

Further information can be obtained from Mr. Alfred Miller, Secretary of the Committee of Management, Royal College of Surgeons, 123, St. Stephen's Green, Dublin.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THOSE whose names already appear on the *Medical Register* can obtain the separate Licence in Medicine of this College and its Licence in Midwifery. In either case an examination has to be passed in the subjects indicated, questions on midwifery, hygiene, and jurisprudence being included in the examination for the Licence in Medicine. For the Licence

in Midwifery practitioners of over five years' standing are exempted from examination by printed questions. The other grades of the College are Members and Fellows. The former are admitted after an examination which is open to all university graduates in medicine and Licentiates in medicine of Royal Colleges of Physicians, and deals with the general subjects of medicine. Fellows are selected, by vote, from among the Members of the College, irrespective of sex.

Fees.—For the Licence in Medicine, 15 guineas; Special Examination, £21; for the Licence in Midwifery, 8 guineas; Special Examination, 16 guineas. For the Membership, 20 guineas to a Licentiate of the College, 35 guineas to others; a special examination costs 10 guineas extra. The Fellowship, £35, in addition to stamp duty, £25.

Information as to special examinations and other matters can be obtained from the Registrar, the Royal College of Physicians, Kildare Street, Dublin.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THIS body, besides granting a Licence in Surgery, admits those possessed of registrable surgical qualifications to its Fellowship under certain conditions. Its Licence is usually granted conjointly with that of the College of Physicians, but it is given separately to holders of a registrable qualification in medicine, provided the College is satisfied that adequate courses of study have been pursued, and provided its own provisional examination is passed. This examination is held on its behalf by the Conjoint Board, and is identical with the ordinary surgical portion of the examinations imposed by that body.

The Fellowship.—Candidates for the Fellowship must pass two examinations, of which the first is in anatomy (including dissections), physiology, and histology; and the second in surgery (including surgical anatomy) and pathology. Both examinations are partly written, partly practical, and partly viva voce; while the final examination includes the performance of operations. All subjects of either examination must be passed at one time, and to neither can a candidate be admitted who has been rejected in any of its subjects by any other licensing body within three months. Candidates are not admitted to the Primary Examination except on evidence that they have already passed an examination in anatomy, physiology, and histology, held by some university or other body whose degrees or licences entitle the holder to admission to the *Medical Register*; if, however, the candidate's name is on the Colonial or Foreign List in the *Medical Register*, at the discretion of the Council. Candidates for the Final Examination must be over 25 years of age, produce a certificate of general good conduct signed by two or more Fellows of the College, and, if successful, must make a declaration before admission to the effect that they do not conduct dispensing practices, and will not do so as long as they are Fellows.

Fees.—Candidates for the Licence pay 5 guineas for examination, which sum, if they pass, is counted as part of the fee payable on admission to the Licence, this being 25 guineas. Candidates for the Fellowship pay 5 guineas for each examination, the total of 10 guineas being reckoned as part of the fee payable on admission to the Fellowship. That fee is 25 guineas in the case of those who are already Licentiates, and 40 guineas in the case of others.

APOTHECARIES' HALL OF IRELAND.

A DIPLOMA is granted by this Hall which entitles the holder to be registered as a practitioner of medicine, surgery, and midwifery, and confers also the privileges of an apothecary. Two periods of dissection, each not less than six months, must be included, and twenty-seven months of hospital attendance, or its equivalent. Three professional examinations have to be passed; they are held three times a year. The Primary Examination deals with biology, physics, and chemistry, practical and theoretical; the Intermediate Examination is in practical anatomy and physiology, and histology and materia medica. A candidate who has passed tests in any of the subjects of these examinations before another licensing body is exempt from further examination in such subjects. The Intermediate Examination, Part II, consists of pathology, medical jurisprudence, and hygiene. The Final Examination deals with medicine, surgery, midwifery, and pharmacy. The Hall's own examination in all these subjects must be passed. Women candidates are eligible.

Fees.—Primary Examination, £10 10s.; Intermediate Examination, £10 10s.; Final Examination, £21; Final alone, when the others have been passed elsewhere, £26 5s.

Application for other information should be made to the Registrar, 95, Merrion Square, Dublin.

MEDICAL SCHOOLS AND COLLEGES.

LONDON.

INFORMATION as to the fees at each of the various metropolitan medical schools, and the scholarships, prizes, and junior appointments which they offer, will be found in the following pages. The courses they provide are fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the English Conjoint Board or the Apothecaries' Society, not less than of those who have London or other university degrees in view. At all, too, special facilities are offered to students who have commenced their professional education at Oxford or Cambridge.

CHARING CROSS HOSPITAL.

THIS school, with its hospital, is situated in the centre of London, and is easily accessible. Primary and intermediate students attend lectures and practical work at King's College. The final studies are taken in the school and hospital, where systematic lectures, demonstrations, and tutorial classes are arranged to cover all the subjects necessary for the qualifying examinations. Departments are also available for the other final subjects of bacteriology, clinical pathology, materia medica, toxicology, public health, operative surgery, and for research work. An Institute of Pathology, with a whole-time staff of scientific workers and fully equipped laboratories, has been established in the school. Students receive their training in preventive medicine, pathology, and bacteriology here, and are encouraged to undertake research.

Women students are admitted to the school and hospital upon the same terms and conditions as men, and after qualification are eligible for resident hospital appointments. A separate common room and a female attendant are provided, but beyond this no further distinction is made.

The fees are at present under revision.

Further information may be obtained on application to the Dean of the Medical School, Charing Cross Hospital, London, W.C.2.

GUY'S HOSPITAL.

THE hospital contains 626 beds in constant occupation. Twenty-six beds are set apart for diseases of the eye, and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. There is a special ward of 30 beds for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the throat and ear departments, the orthopaedic department, the department for the treatment of diseases of the genito-urinary system, and the children's department; there are also some special beds for the treatment of syphilis.

The residential college fronts the east gate of the hospital, providing accommodation for resident students. This contains a dining hall, reading rooms, a library of general literature, and a gymnasium for the use of the residents and of the members of the Clubs Union. The athletic ground at Honor Oak Park is reached from the hospital in twenty minutes. The Gordon Museum of Pathology, the Wills Library, the Departments of Chemistry, Physics, Pathology, and Pharmacology, and the school buildings in general, afford opportunities for a liberal education and for research and provide the full curriculum for a medical qualification. New departments of Anatomy, Physics, and Biology were opened in July, 1923. They are equipped on modern lines, and provide ample accommodation for teaching and research. Special classes are held for the First and Second Examinations for medical degrees of the University of London and for the first F.R.C.S.Eng. Special teaching is provided to meet the

requirements of the Universities of London, Oxford, and Cambridge in general pathology and pharmacology.

Appointments.—All appointments are made according to the merits of the candidates, as determined by a committee of the medical staff. Sixteen out-patient officers, eight house-physicians, twenty-five assistant house-surgeons, eight house-surgeons, four ophthalmic house-surgeons, two genito-urinary house-surgeons, and nine resident obstetric assistants are appointed annually. The house-physicians and house-surgeons, obstetric residents, ophthalmic house-surgeons, and genito-urinary house-surgeons hold office for six months each, and receive free board and lodging in the college. Every student is provided with rooms and commons in the hospital during the period of his "take in" as senior dresser. In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynaecology, diseases of children, diseases of the nervous system, dermatology, otology, actino-therapeutics, anaesthetics, dentistry, orthopaedics, vaccine, tuberculosis, and genito-urinary and venereal disease; clinical assistantships in the various special departments are open to post-graduates.

Scholarships, Prizes, etc.—The following scholarships in Arts and Science are awarded. A. Open Junior Scholarships: (1) An Arts Scholarship of the value of £100, (2) a Science Scholarship of the value of £100; these are awarded annually in July. (3) A War Memorial Scholarship of the value of £200, awarded alternately in Arts and Science. This Scholarship is open every other year; the next award will be made in July, 1924. B. Confined Scholarship in Science. A Junior Science Scholarship of the value of £100 is offered for competition, annually in September, to candidates who have attended preliminary science classes at this school. Candidates for these scholarships (male students only) must be under 21 years of age on October 1st of the year of the competition. C. Open Senior Science Scholarships: (1) A War Memorial Scholarship of the value of £80, (2) an Open Scholarship of the value of £80; both of these are awarded annually in July. Full particulars as to the scholarships may be obtained from the Dean of the Medical School. Junior prizes for general proficiency, £20, £15, £10; Hilton prize for Dissection, £5; Michael Harris prize for Anatomy, £10; Sands-Cox Scholarship for Physiology, £15 for three years; Wooldridge Memorial prize for Physiology, £10; Beaney prize for Pathology, £34; Treasurer's gold medal in Medicine, Treasurer's gold medal in Surgery, and the Golding-Bird gold medal and scholarship for Bacteriology (£20), are awarded annually after competitive examination. The Gull Studentship in Pathology of the value of £250 per annum, the Beaney Scholarship in Materia Medica, of the annual value of about £50, and the Anderson Demonstratorship in Clinical Chemistry, value £150 per annum, are awarded without examination to enable research to be carried on in these subjects. An Arthur Durham Travelling Scholarship of £100 is awarded triennially. The Griffiths Demonstratorship in Pathology of the value of £320 per annum, and the Hilda and Ronald Poulton Fellowship, value £150 per annum, are awarded without examination.

An annual composition fee is paid by all students until a registrable qualification is obtained. Further information may be obtained from the Dean of the Medical School, Guy's Hospital, London Bridge, S.E.1.

KING'S COLLEGE HOSPITAL.

THE medical school of this hospital, which is situated at Denmark Hill, deals with the advanced or final subjects of the medical curriculum. The hospital was opened in 1913, and is the most modern and best equipped in England. In the education at the hospital a special feature has always been the individual attention given to each student. The studies are co-ordinated under the direction of senior members of the honorary staff, assisted by medical, surgical, obstetric, and pathological tutors. There are special departments for diseases of women and children, nervous diseases, ophthalmology, otology, laryngology and rhinology, dermatology, radiology, and physico-therapy. The laboratory and pathological department are specially noteworthy.

Appointments.—Fourteen resident medical and surgical officers are appointed half-yearly, as well as dressers and clerks in the wards, out-patient departments, *post-mortem* rooms, and special departments. Each of the special departments has several clinical assistants. There are three registrars and four tutors, all of whom receive salaries. The Clubs and Societies Union combines athletics, music, and other societies connected with the school, and provides also a common room.

Scholarships, etc.—At entrance: Science Scholarship, £50. At commencement of Final Studies: Anatomy and Physiology Scholarship, £50; Pathology and Pharmacology Scholarship, £50; two Burney Yeo Scholarships, each £80 (for Oxford and Cambridge students); Epsom College Scholarship, £50; Senior Scholarship, £40; Todd Prize, Tanner Prize, Class Prizes and Medals.

Fees.—The composition fee is 93 guineas if paid in one sum. Entrance fee 10 guineas, includes membership of the Clubs and Societies Union.

The calendar of the school can be obtained on application to the Dean, H. Willoughby Lyle, M.D., F.R.C.S., or to the Secretary, S. C. Ranner, M.A., King's College Hospital, Denmark Hill, S.E.5.

THE LONDON HOSPITAL.

THIS hospital, with its medical college and dental school, is situated in the Mile End Road, E.1. The hospital contains 950 beds, and during 1922, 17,444 patients passed through the wards and 107,455 out-patients received treatment. Of the latter number, 32,427 received treatment in the departments for diseases of the ear, nose, throat, eye, skin, and teeth, and in the orthopaedic, venereal, radiological, electro- and physico-therapeutical and inoculation departments. The number of major operations which were performed amounted to 7,215.

The hospital presents, therefore, a large field for clinical instruction, and in its wards and out-patient and special departments exceptional opportunities are afforded for acquiring an extensive and practical experience of all phases of disease.

The clinical units in medicine and surgery co-ordinate the teaching of their subjects in the hospital. The directors and their assistants give practical instruction in elementary clinical medicine and surgery to all students before they are allowed to enter the wards and out-patient department. Senior students are encouraged to work with the units. Special courses of lectures and demonstrations are arranged in medicine and surgery and in their ancillary subjects. Opportunities for research are provided under the supervision of the staffs of the units.

All the departments are modern and adapted for the teaching of all subjects in the various curricula. Special courses of instruction are held in preparation for the examinations of the University of London, for the Fellowship of the Royal College of Surgeons, and for the Membership of the Royal College of Physicians. A course of post-graduate training is held in the work of school clinics for school medical officers (actual and intending) and others. Special entries can be made for the medical and surgical practice of the hospital. A residential hostel on hospital ground is provided for the convenience of students who wish to live near the wards and casualty departments. The athletic ground, of over thirteen acres, is at Highams Park, and is open to all members of the Clubs Union.

Appointments.—The salaried appointments open to past students of the Hospital are those of assistants to the clinical units, medical registrars, surgical registrars, obstetric registrar; medical, surgical, and obstetric tutors; clinical assistants in the medical, surgical, ophthalmic, aural, light and skin, orthopaedic, and electrical departments, and in the Pathological Institute. There are appointed annually 4 resident accoucheurs, 14 resident house-physicians, and 24 resident house-surgeons, 14 resident receiving-room officers, 8 resident emergency officers, 8 clinical assistants to the medical out-patient department, and 16 clinical assistants to the surgical out-patient department, also paid and unpaid clinical assistants in the various special departments. In addition, there are numerous assistantships, clerkships, and dresserships in the departments of medicine, surgery, gynaecology, and obstetrics.

Scholarships and Prizes.—The following is a list of scholarships and prizes:—At Entrance: Price Scholarship in Science, £100; Price Scholarship in Anatomy and Physiology, open to students of Oxford and Cambridge Universities, £52 10s.; Entrance Scholarship in Science, £50; Epsom Scholarship, "Free Medical Education." After Entrance: Buxton Prize in Anatomy and Physiology, £31 10s.; Letheby Prizes in Organic Chemistry and Chemical

Pathology, £25; Prizes in Clinical Medicine, Surgery, and Obstetrics and Gynaecology, £20 each; Duckworth Nelson Prize, in Practical Medicine and Surgery, £10; Hutchinson Prize in Clinical Surgery, £40; Sutton Prize in Pathology, £20; Sir Andrew Clark Prize in Clinical Medicine and Pathology, £26; Anderson Prizes in Elementary Clinical Medicine, £20; Dressers' Prizes, £40; Practical Anatomy Prizes, £10; Arnold Thompson Prize, in Medical and Surgical Diseases of Children, £15; Harold Fink Prize in Dental Surgery, £5 5s. The London Hospital Medical College and the Eliza Ann Alston Medical Research Funds amount to over £26,000.

Fees.—Entrance fee, 20 or 15 guineas, according to examinations passed; annual fee, 40 guineas.

Full information may be obtained from the Dean at the London Hospital Medical College, Mile End, E.1.

The Middlesex Hospital.

The school and hospital are in Mortimer Street, W., close to Oxford Circus, Goodge Street, and Great Portland Street stations. There are prosperous athletic clubs and a gymnasium within the hospital precincts. The hospital contains over 450 beds, including a wing containing 92 beds for patients suffering from cancer. There are special wards for maternity and gynaecological cases, for mental cases, for cases of venereal disease and for diseases of children and of the skin and eye.

The medical school, which includes the Bland-Sutton Institute of Pathology and the cancer research laboratories, is completely equipped for teaching the entire medical curriculum, including the pre-medical subjects, chemistry, physics, and biology. The Bland-Sutton Institute, under the charge of the Professor of Pathology, contains large pathological and public health laboratories, and smaller rooms for original investigation as well as a pathological and anatomical museum. Bacteriological, chemical, and microscopic examinations of material from the wards, operating theatres, and out-patient departments are carried out in the laboratories, and senior students are eligible for clerkships in connexion with this work. Every facility is given for original research. The cancer research laboratories offer unrivalled opportunities for the study of this disease, in both its clinical and pathological aspects. Several valuable scholarships are awarded in this connexion. Students also receive special instruction in the electro-therapeutic and electro-cardiographic departments.

Appointments.—Twenty-two resident appointments are open annually for competition among students of the hospital. The officers reside and board in the residential college free of expense. Two casualty medical and two casualty surgical officers, and two resident officers to the special departments, are appointed annually. Eight house-surgeons are appointed every year at intervals of two months, after examination; six house-physicians are also appointed annually at similar intervals. An obstetric and gynaecological house-surgeon is appointed every six months. In the out-patient departments the appointments are: clerk and dresser to the physicians and surgeons to out-patients; clerk in the departments for diseases of the skin and nervous diseases; dressers to the department for diseases of women, to the ophthalmic surgeon, to the throat and ear department, and to the dental surgeon. Extern midwifery clerks and *post-mortem* clerks are also appointed. The appointments are so arranged that every student may, during his course, hold all the out-patient and in-patient clerkships and dresserships. Students must have held an out-patient clerkship and dressership before holding in-patient clerkships or dresserships. Non-resident qualified clinical assistants are appointed in the Medical, Surgical, Skin, Neurological, Ophthalmic, Throat and Ear, Odontological, Children's, and Electro-therapeutic Out-patient departments.

Scholarships.—There are three Entrance Scholarships, value £100, £50, and £25 respectively. An annual Entrance Scholarship, of the value of £50, is open to students of the universities of the United Kingdom who have completed the curriculum for, or passed the examinations in, anatomy and physiology. Students joining the school in the previous April are eligible. The Freer Lucas Scholarship is annually awarded on the nomination of the head master to a pupil of Epsom College who has passed the first examination for medical degrees (Preliminary Scientific Examination). There is also a scholarship, value £50, awarded annually to students from New Zealand. In addition to the Entrance Scholarships, there are numerous other valuable scholarships, prizes, and exhibitions open to students of the hospital, including the Brodrip Scholarship, value £60 and £40; Lyell Gold Medal and Scholarship, value £55 5s.; Freeman Scholarship, value £30; John Murray Gold Medal and Scholarship, value £25; Hetley Clinical Prize, value £25; Leopold Hudson Prize, value 11 guineas; and the Second Year's Exhibition, value 10 guineas.

Fees.—(*a*) Pre-medical students: For one year or less, £21. (*b*) Students who have completed the Preliminary Science course; Entrance fee, 15 guineas; five annual fees of £42. The annual fee for further attendance at the medical school, if a registrable qualification has not been obtained, is £21. Three-quarters, one-half, or one-quarter of the last annual fee may, at the discretion of the School Council, be returned if the student obtains a registrable qualification within three, six, or nine months of the annual payment becoming due. (*c*) Oxford and Cambridge and other students who have completed the Intermediate course: Entrance fee, 10 guineas; two annual fees of £42; further annual fees as above.

Further information may be obtained from the Dean or the School Secretary.

St. Bartholomew's Hospital.

This institution fills one side of Smithfield and Giltspur Street, sharing with the Post Office buildings a large island of ground separated practically from all other buildings; it is on the edge of the City, and easily reached from all parts of London. The hospital contains 757 beds. Extensive buildings, opened in July, 1907, occupy part of the ground acquired from the old Bluecoat School, and these materially enhance the attractions of the hospital as a place of medical study. The medical school buildings, including the library and the chemical, physical, biological, and physiological laboratories, and anatomical department, have now at their side a very large building, which includes club rooms for the Students' Union, a writing room, luncheon and dining halls, new quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any hospital in the kingdom. During the year 1909 a second block of new buildings was completed. These form the pathological department, and include, in addition to an extensive *post-mortem* room, large and well equipped laboratories for clinical pathology, pathological histology, bacteriology, and chemical pathology, altogether forming the most complete pathological department in the country. Within the precincts of the hospital also there is a residential college for a large number of students. The Students' Union owns, moreover, grounds of some 10 acres in extent for recreative purposes at Winchmore Hill, which is easily accessible from the hospital.

Special classes are held for students preparing for the Preliminary Scientific and other examinations, for the M.B., M.D. of the Universities of London, Oxford, and Cambridge, and for the higher surgical degrees at the same universities, including the M.Ch.Oxon., M.Ch.Cantab., M.S.Lond., and F.R.C.S.Eng. Special laboratory instruction for the D.P.H. of Cambridge, Oxford, Durham, and London is also given.

Clinical Units.—Special Clinical Units have been established in Medicine and Surgery, each under the charge of a professor and director who devotes the whole of his time to the purpose of hospital practice, teaching, and research. In each unit there are an assistant director and four assistants, for whom special laboratory accommodation is provided. The appointments of clerks and dressers are open to all students in these departments, and arrangements are made for all students to study in these units during a part of their clinical course.

Appointments.—Clinical clerks to the physicians and to the physician-accoucheur, and dressers to the surgeons and in the casualty department, are chosen from the students; clerks and dressers are also selected from the students to attend in the out-patient rooms, in the special departments (Ophthalmic, Orthopaedic, Gynaecological, Children's, Laryngological, Aural, Dermatological, Venereal, Electrical, and Dental), and in the *post-mortem* room. Chief assistants and clinical assistants are selected from qualified men appointed yearly to help in the general medical, surgical, and in the special departments. Ten house-physicians and ten house-surgeons are appointed annually. During their first six months of office they act as "junior" house-physicians and house-surgeons, and receive a salary of £80 a year. During

their second six months they become "senior" house-physicians and house-surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident midwifery assistant, an ophthalmic house-surgeon, a house-surgeon to the skin and venereal department, and a house-surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Three resident administrators of anaesthetics are appointed, the senior for one year at a salary of £150, and two juniors for six months with a salary at the rate of £80 per annum, and all are provided with board and rooms. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year.

Scholarships.—Four entrance Scholarships are annually awarded after an examination held in September. The subjects of examination and conditions of eligibility for these scholarships are: (1) One scholarship, value £75, in not fewer than two and not more than three of the following subjects, Chemistry, Physics, Botany, Zoology, Physiology, and Anatomy, limited to students under 25 years of age who have not entered on the medical or surgical practice of any London medical school. (2) One scholarship, value £100, in not fewer than three of the following subjects, Chemistry, Physics, Botany, Zoology, and Physiology, limited to students under 21 years of age who have not entered on the medical or surgical practice of any London medical school. (3) The entrance scholarship in Arts, of the value of £100, will be given in Latin and mathematics, with one other language—Greek, French, or German. (4) The Jeffreson Exhibition in Mathematics, Latin, and one other language—Greek, French, or German—of the value of £50. The value of the scholarships and prizes is over £900 annually.

Further information and a handbook can be obtained on application to the Dean of the Medical College, St. Bartholomew's Hospital, E.C.1.

ST. GEORGE'S HOSPITAL.

THIS school is at Hyde Park Corner, and is carried on in connexion with St. George's Hospital, an institution having a service of 436 beds, of which 100 are at the convalescent hospital at Wimbledon. It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at the teaching centres of London University established at King's College and University College. The school at Hyde Park Corner is devoted entirely to the teaching of clinical subjects, great attention being paid by the members of the staff to individual teaching. A number of special courses are given, in which the requirements of university and all other examinations receive careful attention.

The St. George's Hospital Club consists of an amalgamation club, with smoking and luncheon rooms on the hospital premises, and other students' clubs, with an athletic ground at Wimbledon. Students have the advantage of a well filled library of medical and scientific books. A register of accredited apartments and a list of medical men and others willing to receive St. George's men as boarders may be seen on application to the Dean.

Appointments.—Four house-physicians, four house surgeons, and two casualty officers are appointed every six months. The house officers receive salaries at the rate of £50 per annum, in addition to board and residence. The casualty officers are non-resident, and receive salaries at the rate of £200 per annum. After the student has held a house appointment, the following are, among others, open to him: Medical registrarship at £200 per annum; surgical registrarship at £200 per annum; assistant curatorship of the museum, £100 per annum; obstetric assistantship, resident, at £50 per annum; the post of resident anaesthetist at £100 per annum; the posts (2) of junior anaesthetist, each at £30 per annum.

Scholarships.—Two university entrance scholarships in anatomy and physiology (90 guineas and £70) are awarded at the commencement of each winter session. This year, in addition to these Scholarships, Exhibitions, each of the value of £40 and up to eight in number, will be awarded to candidates of approved merit in the Entrance Scholarship Examination. The William Brown Exhibition of the value of £135 per annum (tenable for two years) is awarded by examination to a perpetual pupil of the hospital every second year. The William Brown Exhibition is £49 (tenable for three years) is awarded by examination to a perpetual pupil of the hospital every third year. Other prizes to the value of £200 are awarded annually to the students of the hospital.

Fees.—First year, £36 15s.; second and third years, £42 each. For the course of clinical study, in the fourth and subsequent years, entrance fee, £10 10s.; annual composition fee, £42. No entrance fee is payable by St. George's students who have studied at King's and University Colleges.

Further information may be obtained from the Dean of the Medical College.

ST. MARY'S HOSPITAL.

THIS hospital and medical school are situated close to Paddington Station (G.W.R.), having on one side a poor district of 500,000 persons, and on the other side the residential district of Kensington and Bayswater. The hospital contains 305 beds, and, by a scheme of affiliation, for teaching purposes, of the Paddington Hospital, Paddington Green Children's Hospital, Maida Vale Hospital for Nervous Diseases, and the Lock Hospital for Venereal Diseases, the teaching facilities extend over 1,000 beds. The athletic ground (10 acres) is situated at Wembley, and can be reached in thirty minutes by a constant service of trains; a large pavilion has recently been erected.

Clinical Facilities.—Clinical Units in Medicine and Surgery were established in 1920, and have now been formally recognized by the University Grants Committee, St. Mary's being one of the six medical schools in London which enjoy this privilege. In addition to the lying-in beds at St. Mary's, every student attends a short course at Queen Charlotte's Lying-in Hospital (which is situated near to St. Mary's) before holding a post on the maternity district of the hospital.

Institute of Pathology and Research.—Students specially interested in pathology and bacteriology have singular advantages at St. Mary's. The Institute comprises seven special departments, the whole being under the personal direction of Sir Almroth Wright, F.R.S. Three research scholarships of £200 each are awarded annually to students working in the departments of the Institute; and research beds are provided. Clerkships in Pathology and Bacteriology and Chemical Pathology, lasting for a period of three months, are open to students of the fifth year, and enable them to carry out the pathological and bacteriological investigations of the wards, and learn the necessary technique under supervision. Seventy-two of these posts are available annually.

Complete Curriculum.—The medical school provides complete courses of instruction, and students can join at once on passing a Preliminary Examination in Arts. Terms begin in October, January, and April.

Entrance Scholarships.—Three entrance scholarships of £210 each and one of £26 5s. are awarded annually in July by nomination on the lines of the Rhodes Scholarships.

Fees.—Composition fees for entire curriculum (5½ years), £200 in one sum, or £210 by five annual instalments. Composition fee for clinical curriculum (2½ years), 90 guineas in one sum, or 95 guineas by two annual instalments. As an alternative, students may pay an annual fee of 40 guineas, with an entrance fee of 10 guineas.

ST. THOMAS'S HOSPITAL.

THIS school and hospital are situated in Lambeth, on the south bank of the Thames, facing the Houses of Parliament, and form one of the well known architectural features of London.

The school buildings, which are separated from the hospital by a quadrangle, comprise lecture theatres, laboratories, and classrooms well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A splendid library and reading room and a complete museum are open to all students from 9 a.m. to 5 p.m., on Saturdays to 1 p.m. The Students' Club premises contain a dining room and smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. Good meals are obtainable at a moderate tariff. The Terrace affords facilities for exercise and recreation. The sports ground, of more than nine acres in extent, is at Chiswick. It can be reached in forty minutes from the hospital; it is admirably adapted for football, cricket, lawn tennis, and athletic sports.

The hospital proper contains 632 beds. In addition to the ordinary provisions of a great hospital there are connected with the out-patient department physicians' and surgeons' rooms provided with ample sitting accommodation, so that

students are enabled to follow closely the practice and teaching of the out-patient staff. There is a full complement of special departments, and connected with the hospital a special tuberculosis department gives opportunity for instruction of students. There is a clinical theatre, centrally situated, so as to facilitate the illustration of lectures by patients from the wards and out-patient room; it is arranged also for lantern demonstrations. The maternity ward, containing 20 beds, gives students full facilities for maternity training, under supervision, within the precincts of the hospital. This obviates any necessity for supplementary instruction elsewhere, and fully prepares the student for the extern maternity practice of the hospital district. The revised regulations of the examining bodies can thus be fully complied with.

Appointments.—All hospital appointments are open to students without charge. A resident assistant physician, a resident assistant surgeon, and a resident anaesthetist are appointed annually at a salary of £200 each per annum. Two hospital registrars, medical and surgical, at an annual salary of £250 each, are appointed yearly. The tenure of these offices may be renewed for a term not exceeding two years. An obstetric tutor and registrar, an ophthalmic registrar (at an annual salary of £50 each), and an orthopaedic registrar (unpaid) are appointed yearly. Ten resident casualty officers and anaesthetists (including two senior) are appointed every six months. Seven house-physicians (including two obstetric house-physicians and one house-physician to the department of diseases of children) and nine house-surgeons (including two ophthalmic house-surgeons, two orthopaedic house-surgeons and one house-surgeon to the ear, nose and throat department) are appointed every six months. Eight or more clinical assistants in the special departments are appointed every three months, and hold office for six months if recommended for re-election. Two research assistants (bacteriological and chemical) are paid £200 per annum each. Clinical clerkships and dresserships to the in-patient and out-patient departments are available to the number of 400 each year.

Scholarships.—There are five entrance Scholarships: Two in Arts, giving one year's free tuition; one of £150 and one of £60, in Chemistry, Physics, and Biology, for students who have not received instruction in Anatomy or Physiology; one of £100 in any two of the following subjects: Anatomy, Physiology, or Chemistry, for students who have completed their examinations in Anatomy and Physiology, for a medical degree in any of the universities of the United Kingdom or the Colonies, and have not entered as clinical students in any London medical school. Valuable scholarships, prizes, and medals are open for competition throughout the whole career of a student, including the Louis Jenner Research Scholarship of the annual value of £60 for Pathological Research.

Fees.—The annual fees are: For each year of study, £50. These fees cover all tutorial classes, but do not include instruction in infectious fevers, pharmacy, and vaccination. Qualified practitioners are permitted to attend the hospital practice on terms which may be ascertained from the Medical Secretary.

Special courses of instruction are given for various examinations, and a register of lodgings is kept at the school. Further information may be obtained from the Medical Secretary of the School, St. Thomas's Hospital, Albert Embankment, S.E.1.

University College Hospital.

The school, which forms part of the Corporation of University College Hospital, is in immediate proximity to the hospital in University Street, and opposite University College. It comprises departments of medicine and clinical medicine, surgery and clinical surgery, midwifery and gynaecology, pathology including morbid anatomy, chemical pathology, biochemistry and bacteriology, cardiography, forensic medicine, mental physiology and mental diseases, dental surgery, practical pharmacy, and other departments for the study of special diseases, such as those of the eye, skin, ear and throat, venereal diseases, and for instruction in anaesthetics, electrotherapeutics, and skiagraphy. The Hospital and School have acquired the National Dental Hospital and College as their Dental Departments, thus providing every facility for the study of dental subjects. The Royal Ear Hospital, Dean Street, Soho, has also been amalgamated as the Ear, Nose, and Throat Department.

The school thus provides the final course of study for the degrees of the Universities of London, Oxford, Cambridge, Durham, and other British universities, and for the diplomas of the Royal College of Physicians and Surgeons in Medicine and Dental Surgery, and the Licence of the Society of Apothecaries. Special bacteriological classes are also held in preparation for the various diplomas of public health. Each department is also equipped for more advanced work, and provides facilities for research.

Clinical Units in Medicine and Surgery are now in operation. The whole-time directors of the Units are concerned with the organization of the teaching generally, but the honorary staff is responsible for the largest share of the teaching in the wards and out-patient department of the Hospital. A Unit in Obstetric Medicine will be established as soon as the new obstetric hospital now in course of construction is finished.

The new buildings of the obstetric hospital of 60 beds (rendered possible by the Rockefeller benefaction), the new Residents' House (with accommodation for 30 residents and students), the extension of the Nurses' Home, and the new research laboratories for the Medical School, are well under way, and these buildings should be ready for occupation by the Spring of 1924.

Scholarships.—The following scholarships and prizes are open to competition: Two Entrance Exhibitions of 112 guineas each, awarded after a competitive examination in anatomy and physiology; Radcliffe Crocker Travelling Scholarship in dermatology for one year, value about £280; the Graham Scholarship in pathology of a sum not exceeding £300 per annum; Leslie Pearce Gould Research Scholarship in surgery for one year, value about £200; the Atkinson Morley Scholarship of £45 a year for three years, awarded after examination in the theory and practice of surgery; the Atchison Scholarship of £55 a year for two years for general proficiency in medical studies; the Magrath Clinical Scholarship, value about £100; the Filliter Exhibition in pathology of £30; the Percival Alleyn Prize for the advancement of surgery by research, value about £60; the Graham Gold Medal for research work; four Fellows Medals in clinical medicine; Liston Medals in clinical surgery; the Bruce Medal in pathology and surgery; two Tuke Medals in pathology; and the Erichsen Prize for practical surgery.

Fees.—The fee for the full course of final studies at the school is 112 guineas if paid in one sum, or 115 guineas if paid in two instalments. Fees for vaccination and fevers not included.

Appointments.—The qualified appointments, in addition to a number of posts as house-physicians and house-surgeons and obstetric assistants, include the appointments of resident medical officer, surgical registrar, obstetric registrar, Harker Smith radium registrar, casualty medical officers, casualty surgical officers, assistants in ear, nose and throat, ophthalmic, skin and venereal diseases departments, and house anaesthetists.

Particulars of general and special courses can be obtained on application to the Dean of the Medical School, University College Hospital, University Street, W.C.1.

Westminster Hospital.

This school, with its hospital, situate in Broad Sanctuary, opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the University of London at King's College. The rest of the work is done in the school buildings near the hospital. The number of in-patients averages 3,000 and out-patients upwards of 30,000 annually, and the hospital and school afford ample facilities for instruction in all branches of medicine and surgery.

Appointments.—A medical, surgical, and obstetric registrar are appointed annually, each with a salary of £50. Three house-physicians, three house-surgeons, one assistant house-physician, one assistant house-surgeon, and a resident obstetric assistant are appointed after examination, and are provided with rooms, commons, and salary of £50 per annum, except the assistant house-physician and the assistant house-surgeon, who are provided with commons only. The assistant house-physician after three months' service becomes house-physician for a further period of six months, and the assistant house-surgeon after three months' service becomes house-surgeon for a further period of six months. Clinical assistants to the assistant physicians and assistant surgeons,

and to the officers in charge of special departments, are appointed from among the qualified students. Every student must perform the duties of out-patient dresser for four months, and afterwards hold the office of in-patient dresser for four months. He is also required to serve two terms of four months each as medical clinical clerk to in-patient physician and one term as gynaecological clinical clerk. Two pathological clerks are appointed every three months to assist in the *post-mortem* room. No student is eligible as an in-patient dresser or clinical clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and dressers in the special departments of hospital practice are periodically appointed. So far as vacancies permit, students of other hospitals are admitted to in-patients' dresserships or clerkships.

Scholarships.—The following open scholarships are offered for competition during the year 1923-24: In the winter session two scholarships in anatomy and physiology, £70 each. In the spring two scholarships in anatomy and physiology, £70 each. A certain number of scholarships have been allotted to universities of England, Wales, and the Colonies, and to public schools. These scholarships are awarded entirely on the nomination of the Principal of the University or School.

Fees.—The annual composition fee is 35 guineas. An entrance fee of 10 guineas is payable by all students—namely, primary and intermediate students, £10 10s.; students entering for the final subjects, £8 8s. These fees include subscriptions for membership of the Clubs Union.

Further information and a prospectus can be obtained on application to the Dean at the Westminster Hospital, Westminster, S.W.1.

The Governors of the Hospital propose in the near future to carry out extensive improvements and alterations to the Hospital which will render it a still more efficient teaching institution.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

THE school is situated at 8, Hunter Street, Brunswick Square, W.C.1, close to the Royal Free Hospital. It is, like all the other London schools which have so far been mentioned, one of the constituent schools of London University. The school buildings have recently been enlarged. The laboratories are extensive and well lighted, and are fully equipped for the examination courses of the University of London and the Royal Colleges of Physicians and Surgeons. Research laboratories are attached to all departments. A large, well equipped library, common room, Union room, and refectory are provided for the use of students. Resident accommodation for 58 students is provided in students' chambers attached to the school.

The Royal Free Hospital, Gray's Inn Road, W.C.1, has 240 beds, all of which are available for clinical instruction. A new block contains the Obstetrical and Gynaecological Unit, which, with the Marlborough Maternity Department, controls 68 beds. There are separate departments for diseases of the eye, ear, and skin, infant welfare, venereal diseases, massage, electrical and *x*-ray work, dentistry, and casualty. The instruction given covers the full curriculum for the M.B., B.S. degrees of the University of London, including first medical courses. Students attend the practice of one of the fever hospitals of the Metropolitan Asylums Board and receive special instruction in lunacy at Bethlem Hospital; they are also admitted to the practice of a number of special hospitals, and hold clerkships and dresserships at the Elizabeth Garrett Anderson Hospital, the Cancer Hospital, Hospital for Sick Children, the National Hospital for Nervous Diseases, the South London Hospital, and the Royal Ophthalmic Hospital. The work of the school includes preparation for the Primary Fellowship examination, and also for the medical school and general hospital course for dental students. An agreement has also been made under which a certain number of students of the school can receive clinical instruction at St. Mary's Hospital, Paddington.

Appointments.—Qualified students of the school can obtain appointments as house-physicians and house-surgeons, obstetric assistants, surgical, gynaecological, and medical registrars, assistant pathologists, assistant anaesthetists, medical electrician, skiagrapher, and clinical assistants and demonstrators in various subjects.

Scholarships.—The Isabel Thorne Entrance Scholarship, value £30, the St. Dunstan's Medical Exhibition, value £60 a year for three years, which may be extended to five years, and the Mabel Sharman-Crawford Scholarship value £20 a year for four years, are offered for competition in each year. The Sir Owen Roberts Memorial Scholarship of the value of £75 a year for four years, the Mrs. George M. Smith Scholarship of the value of £50 a year for three years, which may be extended to five years, the Dr. Margaret Todd Scholarship of the value of £37 10s. a year for four years, and the Sarah Holborn Scholarship of the value of £20 a year for three years, which may be extended to five years, are awarded in alternate years. The Bostock Scholarship, value £90 a year for two or four years, is awarded by the Reid Trustees on the result of an examination held in May by the University of London every fourth year. The holder of the scholarship must enter the London School of Medicine for Women. The Lieutenant Edmund Lewis and Lieutenant Alan Lewis Memorial Scholarship, of the value of £25 a year for four years, is awarded every fourth year. The John Byron Bursary of £20 a year for two years, the Helen Prideaux Prize of £40, the Mabel Webb Research Scholarship of £30 for two years, the Fanny Butler Scholarship of £14 10s. a year for four years, together with many other scholarships and prizes, are offered on sundry conditions. The Dr. Edith Pechey-Phipson Post-Graduate Scholarship of £100 is awarded annually. Various missionary societies also offer scholarships on certain conditions, and assist ladies who wish to go to India and other countries as medical missionaries.

Fees.—Courses for the University of London degrees and the diplomas of the Conjoint Board in England, and other qualifications: £240, payable in five instalments. These sums include library and laboratory fees.

The Students' Union exists to promote corporate action of the students on matters of common interest, to promote and maintain athletic and other clubs, and to issue a school magazine. All students are required to become members of the Union.

Further information can be obtained from the Warden and Secretary.

KING'S COLLEGE.

IN the Faculty of Medical Science instruction is given in the preliminary and intermediate subjects of the first and second examinations leading to the degree of M.B., B.S. of the University of London, of the corresponding examinations of other universities, and of the Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons, including the primary examination for the F.R.C.S.Eng. The courses are open to women students on the same terms as to men.

Regular students who have completed their preliminary and intermediate examinations proceed to a hospital to pursue their studies for the final examinations. The hospitals associated with King's College are: King's College Hospital, Denmark Hill, S.E.5; Westminster Hospital, S.W.1; St. George's Hospital, Hyde Park Corner, S.W.1; and Charing Cross Hospital, Strand, W.C.2.

There is a Department of Public Health and Bacteriology under the direction of Sir William J. Simpson and Professor R. T. Hewlett. Full particulars of this department may be obtained from the Secretary of the College.

A course for the diploma in dental surgery in conjunction with King's College Hospital Medical School has been arranged. Full details may be obtained on application to the Secretary, King's College Hospital Medical School, Denmark Hill, S.E.5.

Scholarships.—The entrance Scholarships are: (1) Two Warneford Scholarships, each £30 for four years; subjects—selected from mathematics, classics, divinity, and science. (2) One Sambrook Exhibition of £25 for two years, open; subjects of examination—mathematics, elementary physics, inorganic chemistry, botany, zoology, and geology. The holders of the preceding awards must proceed to King's College Hospital. (3) Worsley, £100, paid in five annual instalments. (4) Rabbeth Scholarship, value £20, in July, for the best student of the first year. (5) Second year's scholarship, value £20, for the best student of the second year. (6) Daniell Scholarship, £40, awarded on the results of the University Honours Examination.

Full information as to admission, fees, and scholarships can be obtained from the Dean of the Faculty of Medical Science (Professor E. Barclay-Smith), King's College, Strand, W.C.2.

UNIVERSITY COLLEGE.

THIS institution, one of the principal component parts of the University of London, possesses a Faculty of Medical Sciences whose work covers all the subjects included in the group commonly known as the preliminary medical sciences—namely, physics, chemistry, botany, and zoology; and also the intermediate medical sciences — namely, anatomy, physiology, and pharmacology. The new anatomy building, provided by the munificent gift of the Rockefeller Foundation of New York, was opened on May 31st, 1923, by His Majesty the King. This building forms part of the block which includes physiology and pharmacology. The Department of Hygiene and Public Health prepares for the diplomas in public health of the Royal Colleges and of the various universities. Research work is undertaken in all the above named departments. The College undertakes the education of students in all the subjects mentioned, leaving them free to complete their education in the strictly professional subjects—medicine, surgery, and the like—at any one of the recognized schools of advanced medical studies. The work is somewhat differently arranged, according to whether the student has in view the degrees of the University of London or the diplomas of the Royal Colleges. In either case the whole work to be done is divided into courses devised to meet the requirements of different examinations, and students can join the College for any of them. Women students are admitted to all courses on the same terms as men. The general arrangements for the benefit of students include membership of the Union Society or the Women's Union Society with the College gymnasium and the athletic grounds. There is also a collegiate residence for about fifty-five men students at Ealing, and for about seventy women students at Byng Place, Gordon Square.

Scholarships.—The scholarships and exhibitions obtainable include the Bucknill Scholarship, value 135 guineas, in chemistry, physics, botany, and zoology (the successful student must complete his work at University College Hospital Medical School), and two entrance exhibitions in the same subjects, each of the value of 55 guineas.

Fees.—The fees for the courses covering the work of the First Examination for medical degrees of the University of London, and in both parts of the Second Examination, amount to 115 guineas. The fees for the courses covering the corresponding examinations held by the Conjoint Board in England also amount to 115 guineas. These fees may be divided into payments for the different courses which it may be desired to take out, but do not cover tuition for more than a stated period.

A handbook specially relating to this faculty may be obtained on application to the Secretary of University College, Gower Street, London, W.C.1.

THE PROVINCES.

THERE are in England and Wales, not counting London, ten medical schools, each supplying instruction in the full medical curriculum. Accounts of them here follow. In several cases there is appended information concerning hospitals other than those directly connected with the school in question; such hospitals, officially and unofficially, play a part in the education which the students of the school receive, and in any case serve as places of additional or post-graduate study.

OXFORD AND CAMBRIDGE.

BOTH at Oxford and Cambridge there are medical schools which furnish unsurpassed opportunities for obtaining a good knowledge of the preliminary sciences and of anatomy, physiology, and pathology. The laboratories are excellently furnished, and the teaching staffs most distinguished. Both schools provide a full medical curriculum, and there is no essential reason why the student should not complete his career at either of them, but this is not commonly done. The local hospitals, though well equipped, are comparatively small. The university authorities therefore encourage the students, as soon as they have completed the earlier examinations and taken a degree in Arts, to join some London school, and thus spend the time of their preparation for the final examinations in a city where the opportunities for gaining clinical knowledge are greater and more varied. A considerable proportion of Oxford and Cambridge medical students take the London Conjoint diplomas before graduating in medicine and surgery at their own university.

BIRMINGHAM.

THE school in this city is carried on by the Medical Faculty of the University of Birmingham, its students having an adequate number of good laboratories, classrooms, and other necessaries devoted to their use by the university. The clinical work is done at the General and Queen's Hospitals, which are amalgamated for this purpose. Together they have upwards of 600 beds for medical, surgical, and special cases, and with an array of special departments of all kinds, including one for lying-in women. Clinical instruction is given in the wards and out-patient and special departments daily, and formal clinical lectures delivered weekly throughout the winter and summer sessions. Special tutorial classes are also held alike for the degrees of Birmingham and some other universities and for the diplomas of corporations.

Appointments.—The large number of appointments open to past or other students includes the following:—At the General Hospital: surgical registrar, £200 a year; one resident medical officer, salary £155 a year; one resident surgical officer, salary £180 a year; one resident pathologist, salary £70 a year; two visiting anaesthetists, salary £50 a year; four house-surgeons, office tenable for nine months, £70 a year; one house-surgeon to the gynaecological and one to the special departments, each tenable for six months, £70 a year; three house-physicians, post tenable for six months, £70 a year. At the Queen's Hospital: three house-physicians and three house-surgeons (posts vacant in January and April); one obstetric and one ophthalmic house-surgeon (posts vacant in April and October). These appointments are tenable for six months. Salaries at the rate of £70 per annum, with board, lodging, and washing. One resident dresser, tenable for three months; candidates must previously have attended their third year lectures, etc., and need not be qualified; honorarium, £13 13s. on completion of duties. Four non-resident obstetric students who hold office for one month and receive board only at a payment of £1 1s. a week. At the Maternity Hospital: one house-surgeon, salary £50 a year. At the City Workhouse and Workhouse Infirmary: five resident medical officers. At the Birmingham General and Branch Dispensaries: twelve resident surgeons. At the Birmingham Mental Hospitals: five assistant medical officers. At the City Fever Hospitals: three assistant medical officers. At the Children's Hospital: one resident surgical officer, one resident medical officer. At the Birmingham and Midland Eye Hospital: four resident surgeons. At the Orthopaedic and Spinal Hospital: two clinical assistants (non-resident). At the Ear and Throat Hospital: one house-surgeon, £70 a year; four clinical assistants (non-resident). Four non-resident Poor Law appointments are in the gift of the Board of Guardians.

Scholarships.—There are numerous money and other awards for students of sufficient merit, among them being the following: The Walter Myers Travelling Studentship of £300, offered in 1923, and in each alternate year succeeding, tenable at home or abroad; the Sands-Cox Scholarship of £42 (an entrance scholarship in the Faculty of Medicine, awarded on either matriculation or First M.B. marks); four Queen's Scholarships of £10 10s. each, awarded annually at the second, third, fourth, and final university examinations respectively; one or more Sydenham Scholarships, allotted on entrance to students who are the sons of deceased medical men; the Ingleby Scholarships (two) of £10 for proficiency in midwifery and diseases of women; the Arthur Foxwell Memorial Gold Medal (Clinical Medicine) at Final M.B. examination. There is also an entrance scholarship of £37 10s. for students proceeding to a degree in dental surgery. University Clinical Board Prizes are awarded annually as follows: Senior Medical prize, Gold Medal; Senior Surgical Prize, Gold Medal; Midwifery Prize, Gold Medal; Junior Medical Prize, Silver Medal; Junior Surgical Prize, Silver Medal.

Fees.—The composition fee for university classes is £106 5s. This covers all the work required for the degrees of Birmingham and some other universities, and for the ordinary qualifications of licensing corporations, but not the additional courses required for the Fellowship of the Royal College of Surgeons of England, the diploma and degrees of the university in State Medicine, and some other special work. The total cost for the five years' curriculum, including hospital and examination fees, is estimated at £197 0s. 6d.

Other information should be sought from the Dean of the Medical Faculty, University, Edmund Street, Birmingham.

BRISTOL.

THE school is carried on by the Faculty of Medicine of the university, and provides full instruction for all its degrees and diplomas. The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them about 600 beds and extensive out-patient departments, special clinics for diseases of women and children, and those of the eye, throat, and ear, in addition to arrangements for dental work and large outdoor maternity departments. At each of these institutions there are well arranged pathological departments, comprising large pathological museums, *post-mortem* rooms, and laboratories for morbid anatomy. There are also laboratories for work in clinical pathology, bacteriology, and cytology, in which special instruction is given in these subjects. Departments are provided and well equipped for *x*-ray work both in diagnosis and treatment, the various forms of electrical treatment, including high-frequency currents, electric baths, Finsen light treatment, and massage.

The students of the school have also the advantage of attending the practice of the Royal Hospital for Sick Children and Women, containing 108 beds, and that of the Bristol Eye Hospital, with 40 beds. Excellent facilities are thus afforded to students for obtaining a wide and thorough acquaintance with all branches of medical and surgical work. Each student has the opportunity of personally studying a large number of cases and acquiring practical skill in diagnosis and treatment. All classes are open to women.

Appointments.—(1) Undergraduate: Clinical clerkships, dresserships, also ophthalmic, obstetric, pathological, ear, nose and throat clerkships, are tenable at the Bristol Royal Infirmary and the Bristol General Hospital. In these institutions the dressers reside in rotation free of charge. (2) Post-graduate—At the Bristol Royal Infirmary: Four house-surgeons, £120 each per annum; two house-physicians, £120; resident obstetric and ophthalmic house-surgeon, £120; throat, nose and ear house-surgeon, £120; dental house-surgeon, £120. All these appointments are made for twelve months. From the resident officers a senior resident officer is appointed at a salary of £200. At the Bristol General Hospital: Senior resident medical officer, £300 per annum; casualty house-surgeon, £125 per annum; two house-physicians, £125 per annum; house-surgeon, £125 per annum; special obstetric physician, £125 per annum; house-surgeon to special departments, £125 per annum; dental house-surgeon, £300 per annum. All these appointments are for six months, except that of senior resident medical officer, which is for two years.

Scholarships.—The following are among the scholarships and other awards open to students of the school: The Ashworth Hallett Scholarship, value £45, open to women only; two Martin Memorial Pathological Scholarships of £10 each; the Tibbits Memorial Prize, value 9 guineas, for proficiency in practical surgery; the Committee's Gold and Silver Medals for fifth-year students for general proficiency; the Augustin Prichard Prize, value 7 guineas, for proficiency in anatomy; the Henry Clark Prize, value 11 guineas, for proficiency in gynaecology; the Crosby Leonard Prize, value 7 guineas, for proficiency in surgery; the Suple Surgical Prize, a gold medal and 7 guineas; the Suple Medical Prize, a gold medal and 7 guineas; the Henry Marshall Prize, value £12, for dressers; the H. M. Clarke Scholarship, value £15, for proficiency in surgery; the Sanders Scholarship, value £22 10s., for general proficiency; the Barrett-Roué Scholarship for proficiency in diseases of the eye, ear, nose and throat, value £14.

Fees.—The fee for all the courses required for the medical curriculum, including hospital practice, is 205 guineas, paid by annual instalments.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.

The Welsh National School of Medicine.

STUDENTS can complete the whole of their curriculum in the school. The courses of instruction are fully adapted to meet the needs of those students studying for the degrees in Medicine and Surgery of the University of Wales, and certain of them also for the degrees of other universities and for the diplomas of the Conjoint Board. All classes are open to both men and women students.

Medical men wishing to prepare for the Diploma in Public Health or the Tuberculous Diseases Diploma of the University of Wales can attend complete courses of instruction in the school.

Prospectuses can be obtained on application to the Dean of the Faculty of Medicine, or to Mr. D. J. A. Brown, Secretary, at University College, Cardiff.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.

THIS, the Medical School of the Faculty of Medicine of the University of Durham, is in the neighbouring city, Newcastle-on-Tyne. Its classes and lectures are arranged to meet the requirements of the university in all the degrees which the latter grants, and also those of the other examining bodies. The students do their work in the preliminary sciences at Armstrong College, also part of the university, and their clinical work in the Royal Victoria Infirmary, an institution with about 550 beds and special accommodation for the benefit of students. In a Heath wing of the school itself there is the department of physiology. There are also in this wing a gymnasium and a set of rooms for the use of the Students' Union. A new bacteriological department has recently been erected adjacent to Armstrong College.

Appointments.—Assistant demonstrators of anatomy and prosectors for the professor of anatomy, assistant physiologists, pathological assistants, and assistants in the eye department, throat and ear department, and department for skin diseases, are elected periodically. Clinical clerks and dressers are appointed every three months.

Scholarships.—A University of Durham Scholarship, value £25 a year for four years, for proficiency in arts, open annually at the beginning of the winter session to intending students. The Pears Scholarship, value £150, for proficiency in arts (when vacant). The Dickinson Memorial Scholarship, interest of £400, with a gold medal for medicine, surgery, midwifery, and pathology, open to perpetual students in their fifth year. The Tulloch Scholarship, interest of £400 annually, for elementary anatomy, biology, chemistry, and physics, for students at the end of their first year. The Charlton Memorial Scholarship, interest of £700 annually, open to full students entered for the class of medicine, at the end of their fourth or fifth winter. The Gibb Scholarship, interest of £300 annually, for pathology, at the end of summer session. Gibson Prize, interest of £250 stock, for midwifery. Outterson Wood Prize, interest of £250, for psychological medicine. The Goyder Memorial Scholarship, proceeds of £325; subjects: clinical medicine and clinical surgery. Luke Armstrong Memorial Scholarship, proceeds of £680, for best essay in some subject in comparative pathology. The Stephen Scott Scholarship in Surgery, interest on £1,000 annually. The Heath Scholarship in Surgery, of the value of £200, awarded every other year. First award in 1896. Philipson Scholarships (2), the interest on £1,800, to the candidates who obtain the highest marks in the Final M.B., B.S. examinations held in March and June respectively.

Fees.—The composition fee for lectures at the college is £122. Composition fee for hospital practice, £46, *plus* £2 2s. yearly for three years, payable to the Committee of the Royal Victoria Infirmary. Other information should be sought from the Registrar of the College of Medicine at Newcastle.

LEEDS.

THE School of Medicine—which is open to both male and female students—in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in immediate proximity to the General Infirmary, where students sufficiently advanced receive their clinical instruction. The buildings were opened in 1894, and contain excellent dissecting rooms, several well arranged laboratories for physiology, pathology, and bacteriology, three lecture theatres, and several similar classrooms. In addition, there are a library and reading room and two museums, one being devoted to pathology and the other to anatomy. The comfort of the students is secured by common rooms and a refectory in which they can take meals. The General Infirmary has 632 beds, and includes gynaecological and ophthalmic wards, a special children's ward, and a large out-patient department. The Ida and Robert Arthington Semi-convalescent Hospital, Cookridge, attached to the Infirmary, have 88 beds. The West Riding Lunatic Asylum at Wakefield is also open for the study of mental diseases. Students can, in addition, attend the practice of the Leeds Public Dispensary (where the practical instruction in dental subjects is also given), the City Fever Hospitals (800 beds), the Hospital for Women and Children, and the Leeds Maternity Hospital, where the obstetric work is done.

Appointments.—One senior anaesthetist, £50; seven anaesthetists, £25 each; one resident medical and one resident surgical officer, each at £150 per annum; one casualty officer, at £125 per annum; one resident ophthalmic officer, at £100 per annum; one resident aural officer, at £100 per annum; one resident orthopaedic officer, at £150; one ophthalmic house-surgeon, and one resident obstetric officer, at £50 per annum; four house-physicians, each holding office for six months, and four house-surgeons, holding office for six or twelve months. Surgical dressers are appointed every six months; physicians' clerks, ophthalmic and aural dressers, gynaecological ward clerks, gynaecological out-patient clerks, maternity clerks, assistant physicians' clerk, dermatological clerks and assistant surgeons' dressers, dressers in the casualty room, *post-mortem* clerks, and laboratory assistants every three months, and dressers in the venereal clinic every month. A resident medical officer (honorarium at rate of £30 per annum) is also appointed every six months for the Ida Semi-convalescent Hospital. Appointments are also open to students at the Leeds Public Dispensary (four resident medical officers, with salaries commencing at £80), at the Hospital for Women (two house-surgeons, at £50 per annum, and two anaesthetists, £20), and at the West Riding Asylums.

Scholarships.—The university awards annually a scholarship in the form of a free admission to the lectures and classes given in the university, which are covered by the composition fee. The university also awards a scholarship on the results of the first examination, of the value of £68, in the form of a free admission to the clinical teaching of the infirmary.

Fees.—It is estimated by the authorities that the approximate cost of medical education to a student in this university is £300, *plus*, of course, the expenses of living during the five years covered by the curriculum. The fee for a complete course for the First M.B. is £41; the composition fee for the course for the second and third examinations, and for the clinical work at the infirmary, is £174. The composition and clinical fee for those who have passed the second examination is £138.

Further information can be obtained from the Dean and Clinical Subdean, School of Medicine, Leeds.

LIVERPOOL.

THE Medical School of this city is part of the university, and, owing to the enlightened liberality of several men of wealth, is exceptionally well provided with special laboratories, as well as with ordinary spacious and well equipped classrooms and laboratories for the instruction of students proceeding to medical degrees and diplomas in special and ordinary subjects. All the laboratory and other rooms are situated close to one another and intercommunicate, together forming large blocks of buildings. The work of students throughout all stages of their career is arranged upon very satisfactory lines, and the teaching hospitals, of which an account is given below, have amalgamated to form the clinical school of the university.

Appointments.—The nature of the appointments open to past and other students at this school will be gathered from the account which follows of the hospitals forming its clinical department.

Scholarships.—The awards made each year to successful students total over £1,500. They include the following: Two Holt Fellowships, one in Pathology, the other in Physiology; a Robert Gee Fellowship in Anatomy; two John Rankin Fellowships in Anatomy; a John W. Garrett International Fellowship in Bacteriology; a Johnston Colonial Fellowship in Biochemistry; an Ethel Boyce Fellowship in Gynaecology; and a Thelwall Thomas Fellowship in Surgical Pathology; one University Fellowship (value of Fellowships: one at £150, two at £120, seven at £100); a University Scholarship of £25, awarded on the results of the Second M.B. Examinations; a Scholarship in Mechanical Dentistry of £20; two Lyon Jones Scholarships, of the annual value of £21 each for two years, one for the junior and the other for senior students; the Derby Exhibition of £15; the Clinical School Exhibition of £15; the Owen T. Williams Prize; the Torr Gold Medal in Anatomy; John Rankin Exhibition in Practical Anatomy, £25; the George Holt Medal in Physiology; the Kanthack Medal in Pathology; Mitchell Banks Medal in Anatomy; the Robert Gee Prize of £5 5s. in Children's Diseases; Mary Birrell Davies Memorial Scholarship, £60 per annum for four years; two Robert Gee Entrance Scholarships, each of the value of £25 per annum for two years; Dental Operating Prizes (four); Orthodontia Prizes (two); Samuels Memorial Scholarships, three at £20 each; one Thomas H. Bickerton Prize in Anatomy; Dr. N. E. Robert Prize in Zymotic Diseases; Ash's Prize in Dental Surgery, value £2 2s.; Gilmour Medal; and other Entrance scholarships.

Fees.—Information as to the fees for the courses of instruction provided by the schools should be sought from the Dean of the Medical Faculty.

The Clinical School.

As many as ten hospitals have combined to form the clinical school of the university, these being: The Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, the Stanley Hospital, the Royal Liverpool Children's Hospital, the Hospital for Women, the Liverpool Maternity Hospital and Ladies' Charity, the Eye and Ear Infirmary, St. Paul's Eye Hospital, and St. George's Hospital for Diseases of the Skin. Between them they provide about 1,150 beds.

MANCHESTER.

THE staff of the Medical School in this city constitutes the Medical Faculty of the Victoria University, all the arrangements for the instruction of students, both in their earlier and their later studies, being of an elaborate nature. The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains about 592 beds, and has associated with it a large convalescent home (136 beds), and the Royal Lunatic Asylum at Cheadle (430 beds). Instruction in practical gynaecology and midwifery is given at the Royal Infirmary and the St. Mary's Hospitals.

Appointments.—The following are among the appointments open to past and present students of this school in connexion with its arrangements for clinical tuition: A surgical registrar, at £150 per annum; a pathological registrar, at £350 per annum; two medical registrars, at £150 per annum; a surgical tutor, at £30 per annum; a director of the clinical laboratory, at £400 per annum, and one assistant director at £300; three assistant medical officers and three assistant surgical officers, each at £35 per annum; one assistant surgical officer, aural department, at £35 per annum; five anaesthetists, two at £75 and three at £100 per annum; one radiological registrar, at £250 per annum; one resident medical officer, one year, £250 per annum; ditto at Cheadle, one year, £300 per annum; one resident surgical officer, one year, £250 per annum; two resident medical officers for Central Branch, £200 and £100 per annum; one accident room house-surgeon, six months, £200 per annum; one assistant medical officer at the Convalescent Hospital at Cheadle, appointed every six months, at a salary of £80 per annum; ten senior and ten junior house-surgeons and ten house-physicians, appointed during the year for a term of six months, at a salary of £50 for the first six months, and £100 for the second six months. Resident officers are appointed to the gynaecological, the eye, and the ear and throat departments every three months. Clinical clerks and surgical dressers are appointed to the various departments of the hospital every three months.

Entrance and other Scholarships.—The following are among the scholarships obtainable by students of the school: Rogers and Seaton Scholarships in Arts (in alternate years), £40 per annum, tenable for two years. Derby Entrance Scholarship in Mathematics, tenable for one year, value £25, one being awarded annually, except in such years as a Cartwright Scholarship is awarded. Cartwright Scholarship, £35 per annum, tenable for three years. Three Hulme Scholarships, tenable for three years, of £35, one being awarded annually for proficiency in subjects of general education. Two James Gaskill Scholarships of £35, tenable for two years, one being awarded annually for proficiency in the branches of mechanics and chemistry. A Dora Muir Scholarship, £30 per annum, tenable for three years, and open to the competition of women students only. This is awarded triennially. Sir J. P. Kay-Shuttleworth Scholarship, £30 per annum, tenable for three years, awarded triennially, open to the competition of scholars from Sedbergh School, Giggleswick School, and Burnley Grammar School. Subjects: mathematics, chemistry, and mechanics. Dreschfeld Memorial Scholarship, value £20, tenable for two years and awarded triennially on the result of the Entrance Examination. A Theodores Modern Languages Exhibition, £20, awarded annually. Two Dauntesey Medical Scholarships, value £45 and £35, tenable for one year, for candidates who have not commenced the second year of study leading to a medical qualification. Subjects: zoology, botany, and

chemistry. Two Entrance Scholarships in Medicine, value 160 guineas, awarded annually for proficiency in Arts or Science respectively. One Research Fellowship in Public Health of £100, awarded annually. Tom Jones Exhibition in Anatomy, £25, offered annually. A Robert Platt Physiological Scholarship of £90, tenable for one year. A Leech Fellowship of £100 for original research after graduation. A Graduate Scholarship in Medicine, value £25, tenable for one year, awarded annually for proficiency shown at Final M.B. Examination. A Dumville Surgical Prize, value £15, awarded annually at graduation. The Tom Jones Memorial Surgical Scholarship, value £60, tenable for one year, awarded usually annually. The Turner Medical Prize, value £20, awarded annually for proficiency in certain subjects of the Final M.B., Ch.B. Examination. The John Henry Agnew Scholarship of £30, awarded annually for proficiency in the Diseases of Children. The Ashby Memorial Scholarship, tenable for one year (£100), for research in the Diseases of Children; offered triennially. Sidney Redshaw Exhibition in Physiology; one offered annually. The details and regulations of the Dickinson Scholarships—(1) for Anatomy, (2) for Pathology, (3) Research Scholarship in Surgery, and (4) Travelling Scholarship in Medicine—may be obtained from the Secretary to the Trustees. The Sam Gamble Scholarships—the trustees are prepared to award four scholarships of not less than £40 per annum, tenable for not more than four years, to women students who have passed the first M.B. Examination; the conditions can be obtained from the Registrar. The Knight Prize of £50 for original research in the psychological factors in the causation of mental disorder—open to holders of the Diploma in Psychological Medicine or medical practitioners who have been registered in the university as candidates for that diploma.

Fees.—The composition fee for the university course in medicine is 104 guineas, payable in four instalments of 26 guineas, but this sum does not include the fee to cover the work required for the first M.B. Examination. This is 36 guineas, payable in one sum. Hospital fees are additional and usually amount to about 77 guineas.

A prospectus and further information about the school and scholarships may be obtained from the Registrar.

Clinical Work.—The Royal Eye Hospital, the Hospital for Diseases of the Skin, the Manchester Northern Hospital for Women and Children, the well known Hospitals for Children at Pendlebury, and St. Mary's Hospital for Diseases of Women and Children, all make arrangements for the instruction of students.

SHEFFIELD.

IN this city the Medical School is one of the departments of the University, being conducted and controlled by its Medical Faculty, and occupying practically the entire north wing of the quadrangle of the university buildings overlooking Weston Park. The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely, chemistry, physics, biology, anatomy, and physiology—are, both as regards structural arrangement and scientific equipment, on the most modern and complete lines.

For students of pathology and bacteriology there are laboratories replete with everything necessary for the most advanced work, and a large pathological museum which is open daily. In addition, there is a museum devoted to materia medica specimens, and a large library and reading room. There are a number of recreation, athletic, and other societies, all under the management of an annually elected students' representative council, and large and comfortable common rooms both for men and women students. In the university buildings there is a refectory open to all students of the school, and a university journal is published each term. The ordinary clinical work of the school is done at the Royal Infirmary and Royal Hospital, which have amalgamated for the purpose of clinical instruction, and provide over 500 beds for medical, surgical, and special cases, including diseases of the eye.

In addition, the Royal Infirmary has special departments for the treatment of diseases of the skin and ear, with beds assigned to them; whilst at the Royal Hospital there are special out-patient departments for diseases of the throat, ear, skin, orthopædics, and mental diseases. The medical and surgical staffs attend daily, and give clinical instruction in the wards and out-patient rooms. Clinical lectures in medicine and surgery are given weekly. Instruction in the practical administration of anaesthetics is given at either institution by the anaesthetists, and the *post-mortem* examinations at both institutions are in charge of the Professor of Pathology, and afford ample material for study of this subject. Students are able to attend the practice of the Jessop Hospital for Diseases of Women and the Hospital for Sick Children, while special courses on fever are given at the City Fever Hospital, and on mental diseases at the South Yorkshire Asylum.

Appointments.—The following appointments are open to all students who have passed their examinations in anatomy and physiology: (1) Casualty dresserships, (2) surgical dresserships, (3) medical clerkships, (4) pathological clerkships, (5) ophthalmic clerkships, (6) clerk to the skin department, etc. These appointments are made for three months, commencing on the first day of October, January, April, and July.

Scholarships.—Entrance Medical Scholarship, value about £190, open to both sexes. Four Edgar Allen Scholarships of £125 a year for three years may be held by students taking the degree course in Medicine. Two Town Trustees' Scholarships, each of the value of £50, tenable for three years, for boys or girls under the age of 19 years who have been educated in a Sheffield secondary school for a period not less than two years immediately preceding the examination. Four Town Trustees' Scholarships, value £50, for boys or girls under 19 years of age, educated in any school in Sheffield, secondary or otherwise. Town Trustees' Fellowship, value £75, tenable for one year. Mechanics' Institute Fellowship, value £50 (with remission of fees), tenable for one year, and renewable for a second year. The Frederick Clifford Scholarship, value about £50, tenable for two years. Kaye Scholarship, for proficiency in anatomy and physiology, value £22 10s. Gold and bronze medals are also awarded for proficiency in various subjects.

Fees.—Students in the Faculty taking their complete medical course in the university pay an inclusive composition fee of £38 for each of the five years. Students taking a complete dental course pay a composition fee of £25 at the beginning of each year of the course. In addition, a fee of £50 is payable each year the student receives instruction in Mechanical Dentistry in the Dental Department. The fees for special courses taken separately can be ascertained by inquiry of the Dean.

SCOTLAND.

As will be gathered from the following paragraphs, the facilities for acquiring a medical education in Scotland are very ample, whether the student be proceeding to a university degree or to a diploma. To the descriptions of the different Scottish medical centres is in some cases added an account of hospitals which either play an official part in the education given to students as yet unqualified or offer valuable opportunities for post-graduation work.

ABERDEEN.

THE school is conducted by the Faculty of Medicine. This comprises twelve chairs, from which instruction is given in all the main branches of medical science—namely, botany, zoology, physics (ordinary and pre-registration), chemistry (ordinary and pre-registration), anatomy, physiology, materia medica, pathology, forensic medicine, surgery, medicine, and midwifery. Courses of instruction in public health, tropical medicine, medical ethics, and sanatorium treatment of tuberculosis, are conducted by lecturers appointed by the University Court. Special opportunities for practical instruction are afforded in the laboratories and museums attached to the departments.

Clinical instruction is obtained in the Royal Infirmary (accommodating 270 patients), the Royal Lunatic Asylum (900 patients), the Sick Children's Hospital (85 patients), the City Fever Hospital (250 patients), the General Dispensary, Maternity, and Vaccine Institution (10,000 out-patients annually), and the Ophthalmic Institution (3,000 patients annually). Courses of practical instruction are given in diseases of children at the Sick Children's Hospital; in fevers at the City Fever Hospital; in insanity at the Royal Asylum; in diseases of ear, nose, and throat at the Infirmary and Dispensary; in diseases of the eye at the Infirmary and Eye Institution; in venereal diseases and diseases of the skin at the Royal Infirmary.

The degrees granted in medicine are: Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Surgery and Bachelor of Medicine (M.B., Ch.B.). A Diploma in Public Health is conferred after examination on graduates in medicine in any university of the United Kingdom.

The degree of Ph.D. is also granted in this faculty.

Bursaries, Scholarships, and Fellowships, to the number of fifty and of the annual value of £1,180, may be held by students

of medicine in this university. They range from £8 to £100 per annum, and are tenable in most cases for two or three years. The winter session begins on October 10th, 1923; the summer session on April 21st, 1924.

Fees.—An inclusive fee of 126 guineas is payable for instruction within the university, and the fee for the degrees of M.B., Ch.B. is 33 guineas. The total cost, including hospital fees, class and matriculation fees, and degree fees, is about £235.

EDINBURGH.

THERE are two Schools of Medicine: the School of the University, and the School of Medicine of the Royal Colleges of Physicians and Surgeons of Edinburgh,

THE UNIVERSITY SCHOOL.—This school, in addition to other resources of the university, has the following means of affording practical instruction: Royal Botanic Garden, Herbarium, and Museum; Zoological Laboratory and Museum of Science and Art; Physical Laboratory; Chemical Laboratories; Dissecting Room, Bone Room, and Anatomical Museum; Physiological Laboratory; Medical Jurisprudence Laboratories; John Usher Institute of Public Health; Materia Medica Museum and Laboratory; *Post-Mortem* Department of the Royal Infirmary and University Pathological and Bacteriological Laboratory; Tutorial Classes of Practice of Physic, of Clinical Medicine, and Clinical Surgery, Surgery, and Midwifery; and the practice of certain other hospitals.

Fees.—The sessional fee for chemistry, anatomy lectures, physiology, pathology, materia medica, surgery, medicine, and midwifery is £6 6s. each. Physics, botany, zoology, forensic medicine, and public health, £5 5s. Practical zoology, practical anatomy (summer), morbid anatomy, practical materia medica, mental diseases, practical pathology, and medical entomology and parasitology, £4 4s. Experimental physiology, diseases of tropical climates, practical botany, histology, operative surgery, clinical surgery (per term), experimental pharmacology, and invertebrate zoology, £3 3s. Practical anatomy (winter), £6 16s. 6d. Clinical medicine, £3 13s. 6d. first term, subsequent terms £3 3s. Practical chemistry, £4 14s. 6d. Regional anatomy, chemical physiology, surgical pathology, and applied anatomy, £1 11s. 6d. Tuberculosis, diseases of children, diseases of the eye, diseases of the larynx, ear, and nose, diseases of the skin, and venereal diseases, £2 12s. 6d. Advanced bacteriology, £7 17s. 6d. Clinical gynaecology, £2 2s. Infectious diseases, £1 1s.

Scholarships.—There are many funds for the assistance of students by means of bursaries, scholarships, exhibitions, and money awards from the beginning to the end of their undergraduate career. In addition there are funds which help those who have taken a first degree in medicine and surgery to continue at work as research students. The value of these awards, and the conditions attaching to them, are so varied that those interested should consult the prospectus of the school itself. No other university is in a better, even if as good, a position to smooth the financial path of earnest students.

THE SCHOOL OF MEDICINE OF THE ROYAL COLLEGES.—This school is composed of lecturers licensed by the Royal College of Physicians and the Royal College of Surgeons, and also recognized by the university through their *licentia docendi*; for the sake of convenience they lecture in separate buildings near to the Royal Infirmary, but form a single corporate body governed by a board consisting of five members elected by the Royal College of Physicians, five members elected by the Royal College of Surgeons, and five members elected by the lecturers in the school. This board, with the assistance of the standing committees of the school, supervises the whole management and especially the maintenance of the efficiency and discipline of the school. The different buildings at present utilized for the purposes of lecturing are the following: (1) Surgeons' Hall, Nicolson Street; (2) New School, Bristo Street; (3) Nicolson Square; (4) Marshall Street; and other places. The teaching is similar to that of the Scottish universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the school. The fees payable for class and other instruction, and including the sums payable on admission to the examination of the Conjoint Board for the triple qualification, amount to about £180. The Calendar, giving full information regarding classes and fees, can be obtained (price 6d.) on application to the Dean of the School, 11, Bristo Place, Edinburgh.

WOMEN STUDENTS IN EDINBURGH.—Until the close of the summer session of 1916 women students intending to proceed to graduation in the University of Edinburgh, as well as those entering for the triple qualification of the Royal Colleges of Edinburgh and Glasgow, received their training in the Edinburgh School of Medicine for Women. Now women students study under the same conditions as men, and may obtain either the university degree or the diploma of the Royal Colleges. In the university systematic lectures are given to them by the professors in the ordinary classes, which are therefore mixed. With few exceptions, prizes, scholarships, bursaries, and similar distinctions are open to women under the same conditions as for men. The women students also have the same privileges as in the past have been given to the men of attending a certain proportion of the extramural classes taught by the lecturers of the School of Medicine of the Royal Colleges. Most of the Students' Societies are open to women, with the exception of the University Union and the Royal Medical Society. Their place is taken by the Women Students' Union, and the Women's Medical Society. There is also a Women's Athletic Club, with playing fields gifted to it by the University. Information on matters connected with women's studies may be obtained from the Lady Warden, University New Buildings, Edinburgh.

GLASGOW.

THE UNIVERSITY SCHOOL FOR MEN.—The whole course of study required for graduation (M.B., Ch.B.) at the University of Glasgow can be taken here. Besides ample provision for lectures there is practical and clinical work at the hospitals, and practical courses are conducted in the laboratories of the following departments: Surgery, Pathology, Public Health, Pharmacology, Physiology, Anatomy, Chemistry, Zoology, Physics, and Botany; the Botanic Garden and the Hunterian Museum (Zoology and Pathology) are also open to students. New buildings and equipments have been provided for botany, for practical anatomy, for operative surgery, as well as for pathology; the very large additions made a number of years ago to the Chemical Laboratory rendered it one of the most extensive in Scotland. The classrooms and laboratories for the departments of Physics, Physiology, Pharmacology, Materia Medica, Medical Jurisprudence and Public Health, and Zoology are also of recent erection, and are elaborately equipped. Four additional chairs of Medicine, Surgery, Obstetrics, and Pathology have been recently established, the Professors being specially attached to the Royal Infirmary; and a number of University Lectureships in Clinical Medicine, Clinical Surgery, Venereal Diseases, Laryngology, Dermatology, Otology, Psychological Medicine, Tuberculosis, and Electrical Diagnosis and Treatment have been founded there. Four other chairs have been founded at the University, in Bacteriology, Organic Chemistry, Physiological Chemistry, and Applied Physics, and two more, one in Hygiene and the other in Pediatrics, will be established this year (1923). There are also lectureships on the Surgical and Medical Diseases of Children, and on Electrical Diagnosis and Therapeutics. The university, in short, has made great and successful efforts to extend and improve the accommodation of the medical departments, to strengthen the teaching staff, and to encourage post-graduation and research work. Three very extensive general hospitals in the city afford exceptional opportunities for clinical instruction—namely, the Western Infirmary (600 beds), near the university, to which the Regius Professors are attached; the Royal Infirmary (630 beds); and the Victoria Infirmary (260 beds); while the Royal Asylum (460 beds), the Royal Hospital for Sick Children (200 beds), the Royal Maternity and Women's Hospital (108 beds), the Glasgow Eye Infirmary (100 beds), the Ophthalmic Institution (35 beds), the fever hospitals at Belvidere (680 beds) and Ruchill (540 beds), and other institutions afford facilities for the practical study of special branches. The large general hospitals of the Parish Council are now also available for clinical instruction in Medicine and Surgery. Information regarding post-graduate study will be found at page 385.

Bursaries.—Bursaries confined to the Medical Faculty amount in annual value to about £1,000, while bursaries in any faculty, amounting to about the same annual sum, may be held by students of medicine, a number of both sets being open to women. Several valuable scholarships may be held by medical students who have graduated in Arts.

The following bursaries are open to undergraduates of both sexes: The Gibson Bursary, annual value £36, tenable for four years. This is open to medical students who are preparing for service as medical missionaries in connexion with the Church of Scotland and will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. The Arbroath Bursary, annual value £40, tenable for three years, is awarded by the Senate, on the recommendation of the Faculty of Medicine, to the student who is of the highest merit among the candidates, as shown by their class records and their performances in the First and Second Professional Examinations. One Logan Bursary, annual value £16, tenable for four years; appointment by the Senate. Six Lorimer Bursaries (each £20 and tenable for one year) are awarded to the best students in each of the following classes: botany, zoology, physics, chemistry, anatomy, physiology. The Mackintosh Mental Science Bursary in medicine, of the value of £31, is awarded annually to the student (of either sex) attending the class of insanity who stands first in an examination in that subject, the bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The Gardiner Bursary, annual value £14, tenable for two years, will be awarded after the autumn professional examination to the candidate who has passed in physiology at the Second Professional Examination, and whose aggregate of marks in that subject and in chemistry and physics of the First Professional Examination is the highest. Of the eight James A. Paterson Bursaries two are awarded each year; they are of the value of £30 and £20 respectively, and are tenable for four years; examination in mathematics and natural philosophy in June for students entering the first and second year of medical study. The following are tenable in any faculty: Four Nivison Bursaries (each £75 and tenable for four years), two Pratt Bursaries (each £20 and tenable for four years), and two Taylor Bursaries (each £10 and tenable for four years). Andrew and Bethia Stewart Bursaries (£50 each, tenable for three years); candidates must have taken the M.A. degree of Glasgow. There is a special examination. Nine Glasgow Highland Society's Bursaries, for students of Highland descent, of the annual value of £25, and tenable for five years; two vacant each year.

The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the university ordinary class fees of students of Scottish birth or extraction, under conditions given in the *University Calendar*. The Dobbie Smith Gold Medal is awarded for the best essay on a prescribed subject within the science of botany. The Brunton Memorial Prize of £10 is awarded annually to the most distinguished graduate in medicine of the year. The University Commissioners issued an ordinance to make regulations for the admission of women to certain bursaries, scholarships, and fellowships. Scholarships and fellowships are offered by the Carnegie Trust in science and medicine for post-graduation study. There are also four McCunn Medical Research Scholarships (two of £200 and two of £400) for graduates in medicine of the Scottish universities; one Faulds Fellowship for Research in Medical Science of approximately £200 for three years; and one Strang Steel Scholarship value £160 for one year.

Fees.—The matriculation fee for each year is £2 2s. In most cases the fee for each university class is £6 6s., but in some cases it is £4 4s. For hospital attendance students pay an entrance fee of £7 at the Western Infirmary, with an additional fee of £5 5s. for each winter and £2 12s. 6d. for each summer clinical course; at the Royal Infirmary the fees are somewhat similar. The university fee for the four professional examinations is £34 13s. For the whole curriculum the fees for matriculation, class attendance, hospital attendance, and professional examinations amount to about £225.

For further information apply to the Registrar, Glasgow University.

QUEEN MARGARET COLLEGE.—In this, the Women's Medical School of the University of Glasgow, the courses of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with classrooms, reading room, library, etc. They are taught in some classes apart from male students, in others together with them, but in either case have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards containing 520 beds are available for their use, and in its dispensary; and similarly in the Western Infirmary and in the Victoria Infirmary; also in the Royal Hospital for Sick Children, the Glasgow Ear Hospital, the Royal Asylum, Gartnavel, Hawkshead Asylum; the Ophthalmic Institution, the City of Glasgow Fever Hospitals, Belvidere and Ruchill; and the Glasgow Royal Maternity and Women's Hospital.

Scholarship.—The Arthur Scholarship, annual value £20, tenable for three years. Open to competition by medical students of first year at the First Professional Examination in October, 1922. This scholarship is restricted to women medical students.

Full information can be obtained from the Mistress, Queen Margaret Hospital.

Board for Students.—A house of residence for women students, Queen Margaret Hall, is situated near the college, in Bute Gardens. The cost of board and residence is from 27s. to 32s. 6d. a week, according to accommodation. Application to be made to the Lady Superintendent. Another hostel near the college is South Park House, Ann Street, belonging to the Student Christian Movement, and open to women students of all colleges in Glasgow. Cost of board is from 28s. to 30s. weekly. Applications to be made to the Warden.

ST. MUNGO'S COLLEGE.—This is the Medical School of the Royal Infirmary, which is the largest general hospital in Glasgow. The infirmary is situated in Cathedral Square, Castle Street, and has car communication with every part of the city. St. Mungo's College is in the infirmary grounds and affords full courses in all the subjects of the medical curriculum, and in all the medical subjects of the dental curriculum.

The infirmary has (including the ophthalmic department) over 700 beds, the average number occupied in 1920 being over 600. There are special beds and wards for diseases of women, of the throat, nose and ear, venereal diseases, burns, and septic cases. In the out-patient department the attendances in 1921 numbered 168,610. In addition to the large medical and surgical departments, there are departments for special diseases—namely, diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. There is also a fully equipped electrical pavilion, with the latest and most approved apparatus for diagnosis and treatment.

Appointments.—Five house-physicians and eleven house-surgeons, who must be fully qualified, are appointed every six months, and board in the hospital free of charge. Clerks and dressers are appointed by the physicians and surgeons. As many cases of acute diseases and accidents of a varied character are received, these appointments are very valuable.

Fees.—The average class fee is £3 3s. for summer classes and £4 4s. for winter classes. The fees for all the lectures, practical classes, and hospital attendance necessary for candidates for the diplomas of the English or Scottish Colleges of Physicians and Surgeons amount to about £80. The classes are open to male and female students.

A syllabus of classes can be obtained on application to the Secretary to the Medical Faculty, St. Mungo's College, 86, Castle Street.

THE ANDERSON COLLEGE OF MEDICINE.—This school provides education in all subjects of the curriculum for both medical and dental students. The school buildings are situated in Dumbarton Road, immediately to the west of the University and Western Infirmary. The hospital practice and clinical lectures are provided in the Western or Royal Infirmary; pathology in the Western or Royal Infirmary; vaccination and dispensary practice in the Western or Royal Infirmary Dispensary. These classes are recognized by all the licensing corporations in the United Kingdom, also by the Universities of London, Durham, Glasgow, and Edinburgh (the latter two under certain conditions stated in the school Calendar). The courses (lectures and laboratory) in public health are recognized by the Scottish Licensing Board, the Universities of Oxford, Cambridge, and London, and the London and Irish Colleges.

Fees.—The fees for the lectures and practical work required by ordinary students range between 2 and 5 guineas a session. In the Public Health Department the fee for a six months' course is £14 14s. The Carnegie Trust pays the fees of students at Anderson College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

A Calendar will be sent on receipt of a postcard by the Secretary to the Medical Faculty, the Anderson College of Medicine, Glasgow, W., who will forward any further information which may be desired.

The Royal Samaritan Hospital for Women, Glasgow, with over 90 beds, offers facilities for clinical instruction in the diseases peculiar to women. Particulars may be obtained from J. Mason Macquaker, M.A., honorary secretary, 149, St. Vincent Street, Glasgow.

ST. ANDREWS AND DUNDEE.

THE medical departments in these two teaching centres cater specially for students proceeding to the degrees of the University of St. Andrews, but admit other students as well. In the former city the United College provides education in all subjects of the first two years. In Dundee, University College provides for the needs of students from the beginning to the end of the five years' curriculum. Its buildings are modern, and contain fully equipped laboratories. The clinical work of the school is facilitated by various institutions. The class fees are from £6 6s. to £5 12s. 6d. for systematic classes, and from £4 14s. 6d. to £4 4s. for practical classes. The hospital ticket is £1 8s. for three months, £4 4s. a year, or perpetual £13 6s. 8d. in one sum. The inclusive or composition fee for the curriculum is £182. In connexion with both institutions there are bursaries and scholarships of considerable value, which are awarded after competitive examination. Information as to these can be obtained from the Secretary of the University of St. Andrews. Information regarding the clinical facilities may be obtained from the Dean of the Medical Faculty, Medical School, Dundee.

Clinical Work.

Good opportunities for clinical work are afforded by the Dundee Royal Infirmary, the instruction given thereat being recognized for purposes of graduation by all the Scottish Universities, the University of London, the University of Cambridge, the National University of Ireland, and by the Royal Colleges of England and Scotland.

IRELAND.

THERE is a choice of six schools for those pursuing their medical studies in Ireland. For clinical instruction the choice is equally satisfactory and varied, though the hospitals themselves are comparatively small. Some account of the schools follows.

DUBLIN.

School of Physic.

This school is in Trinity College, Dublin, and is carried on under the joint auspices of the University of Dublin and of the Royal College of Physicians in Ireland, the King's professors of institutes of medicine (physiology), practice of medicine, materia medica, and midwifery being appointed by the latter. Clinical instruction is given at Sir Patrick Dun's Hospital, and some twelve other metropolitan hospitals and asylums are recognized by the Board of Trinity College. The courses of instruction are open to all medical students whether they belong to the university or not.

The Schools of Surgery.

These are schools carried on in Dublin under the supervision and control of the Council of the Royal College of Surgeons. They are formed of the College's own school, combined with two famous old medical schools—Carmichael and Ledwich; they are attached to the College by charter. The buildings contain spacious dissecting rooms, special pathological, bacteriological, public health, chemical, and pharmaceutical laboratories. Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the College.

Prizes.—Among the prizes annually awarded are: The Barker Anatomical Prize (£26 5s.); the Carmichael Scholarship (£15); the Mayne Scholarship (£8); the Gold Medal in Surgery, the Stoney Memorial Gold Medal in Anatomy, the H. Macnaughton Jones Gold Medal for Midwifery and Gynaecology; class prizes, accompanied by silver medals, will also be given in each subject.

A prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin.

University College, Dublin.

This is one of the constituent colleges of the National University of Ireland, and at present conducts its work at buildings on St. Stephen's Green. It possesses a good library, and the arrangements for the teaching of medical students from beginning to end of the curriculum are adequate. Applications for other information may be addressed to the Secretary and Bursar, University College, Dublin.

Clinical Work.

There are numerous well arranged hospitals in and around the city, and almost all of these are recognized for teaching purposes by the Conjoint Board of Ireland, the University of Dublin, the National University of Ireland, and by like bodies elsewhere in the British Isles. Among them are the Mater Misericordiae Hospital, with 345 beds; Dr. Steevens's Hospital at Kingsbridge, with 150; Meath Hospital and County Dublin Infirmary, with 160; Mercer's Hospital, close to Trinity College, with 120; the Royal City of Dublin Hospital, with 124; the Adelaide Hospital, with 140; the Royal Victoria Eye and Ear Hospital, with 100 beds; Sir Patrick Dun's, which has a direct connexion with the School of Physic, and the combined institutions formed by the Hardwicke Fever Hospital, the Richmond Surgical Hospital, and the Whitworth Medical Hospital, with an aggregate of 230 beds.

As for the famous Dublin medical institution known as the Rotunda Hospital, this practically consists of two distinct hospitals, and is believed to be the largest combined maternity and gynaecological hospital in the British Isles. It receives nearly 3,000 patients every year, and, apart from ordinary out-patient work of a gynaecological order, annually attends some 2,000 women at their own homes during their confinement. It possesses residential quarters for students, and, taken as a whole, offers exceptional opportunities for study both to ordinary students and to medical graduates of any nationality.

BELFAST.

THE Medical School is part of the Faculty of Medicine of Queen's University, Belfast, and provides a complete medical curriculum for all purposes. The laboratories in connexion with the departments of biology, chemistry, physiology, pathology, anatomy, physics, and materia medica are all excellent, and there is a Students' Union which gives students the advantages of dining rooms, reading rooms, a library, and various recreation rooms. Women are eligible as students. Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 300 beds, and the Mater Infirmorum Hospital, which has 150 beds. Other hospitals open to the students of the university are: the Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital; the Benn Ulster Eye, Ear and Throat Hospital; the Union Infirmary and Fever Hospital; the Fever Hospital, Purdysburn; the District Lunatic Asylum, the Samaritan Hospital, Forster Green Hospital for Diseases of the Chest, and the Belfast Hospital for Skin Diseases.

Scholarships.—(1) Twelve, of the value of £40 each, are assigned as Entrance Scholarships in the Faculties of Arts, Science, and Medicine, tenable for one year; (2) sixteen Professional Scholarships, value from £15 to £40 each; (3) one Hutchinson Stewart Scholarship, £12, in mental diseases; (4) one Mackay Wilson Travelling Scholarship, £100, awarded triennially; (5) Isabella Tod Memorial Scholarship, tenable for three years, awarded triennially to a woman student; (6) Magrath Clinical Scholarship, awarded annually, value about £112; (7) two Musgrave Studentships of £200 in Physiology and Pathology; (8) numerous sessional prizes. There is also a post-graduate research fund, open to all graduates of not more than three years' standing. Gold medals are awarded at the M.D. examination.

Fees.—The cost of the curriculum intended for students proceeding to the degrees of the Queen's University of Belfast is, approximately, £150. This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital or the Mater Infirmorum Hospital, and fees for the special hospitals. The course for the Conjoint Board costs about the same amount.

The Regulations of the Medical Faculty, containing full information, can be obtained on application to the Secretary, Queen's University, Belfast, price 4d.

UNIVERSITY COLLEGE, CORK.

THIS institution, formerly known as Queen's College, Cork, is one of the constituent colleges of the National University. It holds examinations for all the faculties of that university, in addition to continuing the work which it has hitherto performed—namely, that of providing education adapted to the needs of medical students at all stages of their career. Its first aim is to fit students for the degrees

of the new university, but students proceeding for the examinations of the Conjoint Board of England, Scotland, or Ireland, the Society of Apothecaries of London, or the Apothecaries' Hall of Ireland, or London University, can arrange the courses of lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance at the college courses are also accepted by the University of Cambridge. Clinical instruction is given at the North and South Infirmaries (each 100 beds) and at the Cork Union Hospital (1,200 beds). Students can also attend the Mercy Hospital (60 beds), the County and City of Cork Lying-in Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session extends from October to June.

There is a Dental School in which the degree of Bachelor of Dental Surgery of the National University of Ireland can be obtained. There is a large well equipped dental hospital in connexion with the school.

Scholarships.—Over £4,000 are available annually for scholarships in the College. Particulars as to each of them can be obtained on application to the Registrar.

Fees.—The fees for the lectures and hospital attendances required by the National University of Ireland course, including examination fees, come to about £150.

Further information can be found in the college regulations, or obtained on application to the Registrar.

UNIVERSITY COLLEGE, GALWAY.

THIS institution is one of the constituent colleges of the National University of Ireland, and includes Faculties of Art, Science, Law, Celtic, Engineering, Commerce, and Medicine. The college buildings are well lighted and well ventilated, and contain dissecting rooms, an anatomical theatre, and laboratories for the study of physiology, chemistry, physics, and other departments of medical science. For pathology and chemistry new laboratories are now provided. It has good grounds surrounding it, and there are many arrangements, such as a library, a college union, and an athletic union, for the benefit of those belonging to the Medical Faculty, as well as for students in other departments of the college. The clinical teaching, which is recognized as qualifying not only for the degrees of the National University, but for those of London University and the diplomas of the various colleges in the three kingdoms, is carried on at the Central Hospital, Galway County Hospital, the Galway Fever Hospital, and the Galway Dispensaries. The Galway Central and County Hospitals are general hospitals, and at the other two hospitals and at the dispensaries students have ample opportunities of studying zymotic and chronic diseases. The Central Hospital has a special ward for diseases of children. Each year the governing body offers about £1,500, and the County Councils of Connaught offer about £3,500, in scholarships. These scholarships are tenable in any faculty. Additional information regarding these scholarships can be obtained on application to the Registrar, and to the Secretaries of the Connaught County Councils.

CLINICAL HOSPITALS IN ENGLAND.

THERE are a great many hospitals in Great Britain and Ireland which, though not connected with any medical school, open their doors either to those who have yet to become qualified, to those who are doing post-graduation work, or to both. The facilities they offer for gaining practical clinical experience are very great, and should not be overlooked. Their honorary staffs commonly make a point of giving such instruction as opportunity offers, and at those situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition, they all have to offer, at shorter or longer intervals, appointments for resident medical officers, house-physicians, and house-surgeons. These are usually paid offices, which may be held for periods varying from six months to a year. Some of those situated in the great medical centres in the provinces, and in Scotland and Ireland, have already been mentioned in speaking of the medical schools in these localities, but it should be added that there are many other provincial hospitals where admirable work is done, and at which much valuable experience can be gained by both senior and junior students, and by those already qualified. Cases in point are the Royal Infirmary, Bradford; the Royal Sussex County Hospital, Brighton; the Royal United Hospital, Bath; the Kent and Canterbury Hospital; Derbyshire Royal Infirmary; the Royal Albert Hospital and Eye Infirmary, Devonport; the Royal Devon and Exeter Hospital; the West of England Eye Infirmary, Exeter; the Gloucestershire Royal Infirmary and Eye Institution; the Royal Infirmary, Leicester; the County Hospital, Lincoln; the General Hospital, Northampton; the Norfolk and Norwich Hospital; the General Hospital, Nottingham; the Royal Portsmouth Hospital; the Royal Berks Hospital, Reading; the Royal South Hants and Southampton Hospital; the Staffordshire General Infirmary, Stafford; the North Staffordshire Infirmary at Hartshill; the Royal Hants County Hospital, Winchester; the Wolverhampton and Staffordshire General Hospital; the County Hospital, York; and the Coventry and Warwickshire Hospital.

London Clinical Hospitals.

As for the hospitals in the metropolis, so many of these take a share in the giving of clinical instruction that it is worth while to classify them.

General Hospitals.—These include the Dreadnought Hospital at Greenwich, and its annexe at the Albert Dock, which form the headquarters of the London School of Clinical Medicine, and the London School of Tropical Medicine with its hospital at Endsleigh Gardens; the West London Hospital and the Prince of Wales's General Hospital, Tottenham, both of these being described in the article on post-graduate work; the Royal Northern Hospital, Holloway Road, an institution containing 185 beds; and the Temperance Hospital in Hampstead Road.

Children's Hospitals.—There are at least seven of these, the leader among them being the Hospital for Sick Children, Great Ormond Street, which has 240 beds. There are also the East London Hospital for Children, Shadwell, with 124 cots; the Queen's Hospital for Children, Bethnal Green, with 134; the Victoria Hospital for Children, Chelsea, with 104; the Belgrave Hospital for Children, which has a considerable out-patient department, but in-patient accommodation for only 40 children; the Paddington Green Children's Hospital, an institution of about the same size; and the Evelina Hospital for Sick Children, Southwark Bridge Road, with 76 beds.

Hospitals for Women.—Queen Charlotte's Lying-in Hospital, Marylebone Road, with 70 beds and a residential college for students and practitioners, specializes in the teaching of midwifery. The Samaritan Hospital for Women, Marylebone Road, admits qualified practitioners as clinical assistants to both the in-patient and out-patient departments; demonstrations are given daily in both departments, the fees—payable in advance—being £3 3s. for three months; full particulars may be obtained from the secretary. In addition may be mentioned the Hospital for Women, Soho Square, whose teaching is confined to post-graduates in limited numbers; the Chelsea Hospital for Women, Arthur Street, Chelsea; and the Elizabeth Garrett Anderson Hospital for Women in Euston Road, the latter being in the nature of a general hospital so far as concerns the class of case treated.

Eye Hospitals.—The largest of these is the Royal London Ophthalmic Hospital (Moorfields), City Road. At this hospital two complete courses of instruction are given during the year—October to February and March to July—comprising the following subjects: anatomy, physiology, and optics; ophthalmic medicine and surgery—(1) external diseases, (2) motor anomalies and squint, (3) ophthalmoscopic conditions (weekly classes), (4) pathology; practical refraction classes; methods of examination (practical); operative surgery; practical pathology; practical bacteriology; *x*-ray and radiotherapy; clinical lectures; discussion classes. A fee of 24 guineas entitles the holder to one full five months' course (with the exception of practical pathology and practical bacteriology), together with a permanent ticket for the practice of the hospital. Fee for the practice of the hospital (permanent), £5 5s.; for three or six months, £3 3s.; for two months, £2 2s.; for one month, £1 1s. Gentlemen are eligible, under certain conditions, for the posts of chief clinical assistant, clinical assistant, and junior assistant. Clinical work takes place every morning at 9 o'clock, and operations at 10 every morning. An additional special course in the preliminary subjects (namely, anatomy, physiology, and optics) for the D.O.M.S., and other ophthalmology examinations, will be held immediately preceding the date of the examination. The fee for this course will be 12 guineas, or £5 5s. for any subject separately. Further particulars may be obtained from the Dean of the Medical School. Other eye hospitals are the Royal Westminster Ophthal-

Hospital near Charing Cross, the Royal Eye Hospital, Southwark, and the Central London Ophthalmic Hospital, Judd Street, W.C.1, each with about 40 beds.

Fever Hospitals.—The Metropolitan Asylums Board has under its control a good many institutions in and around London for the treatment of the more serious zymotic disorders; it makes special arrangements for the instruction of students in this subject, and grants certificates at the end of the courses. Detailed information should be sought from the Clerk to the Board, Victoria Embankment, E.C.4.

Chest Hospitals.—The largest of these is the Brompton Hospital for Consumption, which has 333 beds and a large sanatorium at Frimley with 150 beds. There is also the City of London Hospital for Diseases of the Chest, Victoria Park, with 175 beds, and the Royal Hospital for Diseases of the Chest, City Road, which has recently amalgamated with the Royal Northern Hospital, Holloway Road.

Nose, Throat and Ear Hospitals.—The institutions which confine their work to disorders of the throat, nose and ear all make special arrangements for the benefit of senior and post-graduate students. They are the Metropolitan Ear, Nose and Throat Hospital, Fitzroy Square; the Royal Ear Hospital, Dean Street; the Central London Throat, Nose and Ear Hospital, Gray's Inn Road; and the Hospital for Diseases of the Throat, Golden Square—the latter, which possesses 75 beds, being the largest of the four institutions.

Miscellaneous Special Hospitals.—Among these are the Bethlem Royal Hospital, St. George's Fields, S.E.1, which confines its work to the treatment of mental diseases, and includes a department for nervous and early mental disorders; St. Peter's Hospital for Stone and Urinary Diseases, Henrietta Street, Covent Garden; St. Mark's Hospital, City Road, which devotes itself to the treatment of diseases of the rectum, including cancer and fistula; the National Hospital for Diseases of the Heart in Westmoreland Street, W.1; St. John's Hospital for Diseases of the Skin, in Leicester Square; the Hospital for Diseases of the Skin, Stamford Street, Blackfriars; and the National Hospital for the Paralysed and Epileptic, Queen Square, W.C.1, an institution possessing 200 beds and a world-wide reputation.

Detailed information as to the teaching arrangements of all these institutions may be obtained on application to their secretaries.

WOMEN IN MEDICINE.

WOMEN are admitted to all the medical examinations of the following qualifying bodies: all the Universities of Great Britain and Ireland, with the exception of Cambridge; the Royal College of Physicians of London and the Royal College of Surgeons of England; the Society of Apothecaries of London; the Conjoint Boards of Scotland and of Ireland. The regulations of the various universities and colleges and those of the General Medical Council set out in previous sections apply to women in the same way as to men.

Medical Education of Women.

The school which admits women only is the London (Royal Free Hospital) School of Medicine for Women, which is one of the constituent schools of the Medical Faculty of the University of London. Glasgow University (see p. 379) has Queen Margaret College for the use of students of the University; and where some of the university classes, such as those in practical anatomy, are restricted to women. The clinical classes and university lectures in the Glasgow Royal Infirmary are open to students of both sexes. Women are also admitted to the schools of medicine in connexion with King's College, Charing Cross Hospital, and St. Mary's Hospital, London; and in restricted numbers to University College Hospital Medical School. The medical schools of the English, Scottish, and Irish Universities and Colleges are open to women. The arrangements for women students in Edinburgh are briefly indicated on page 379; women enrolled in this university are, however, not guaranteed a course in Practical Obstetrics in the Maternity Hospital. Women can also attend the medical school attached to University College, Cardiff. As regards the London School of Medicine for Women, particulars will be found at page 374 in the article on London Medical Schools.

Openings for Medical Women.

Women hold many appointments as residents in general hospitals, in hospitals for women and children, and in a large number of sanatoriums, infirmaries, fever hospitals, and asylums. Many medical women are also engaged in public health, tuberculosis, and school inspection work, as well as at infant welfare centres and venereal disease clinics; they can also become prison medical officers and inspectors of the mentally deficient. A considerable number of medical women are engaged in private practice, both as consultants or specialists and as general practitioners.

In view of the very great increase during the past eight years in the number of women medical students it may, perhaps, be well to direct the attention of those who contemplate entering the profession to the note of caution which has been sounded from time to time in these columns. It is desirable that women who propose to study medicine should reflect carefully on the keen competition for posts which has existed since the war, and when qualified, consider the wisdom of seeking a wider field than hitherto in general practice and specialization, more especially in obstetrics and gynaecology. There is a large field opening in India, both in practice and in the women's services of that country. Applications for particulars regarding the women's medical service for India may be addressed to the Hon. Secretary, United Kingdom Branch of the Countess of Dufferin's Fund, c/o Sir Havelock Charles, G.C.V.O., India Office, Whitehall, S.W.1.

Equal Pay for Equal Work.

The British Medical Association was the first of all professional organizations to lay down the principle that no distinction should be made on the ground of sex as regards the emoluments to women members of the profession. Attempts are continually being made by public authorities to obtain the services of women doctors at lower salaries than those paid to men, and the Association looks to all medical women to help it in resisting such attacks upon the solidarity of the profession. In its constant efforts to maintain this principle the Association works in close co-operation with the Federation of Medical Women. In defence of the principle the Association has at various times fought—usually with success—Government departments and local authorities of all kinds. Where the authorities concerned have declined to recognize the justice of the claim that equal pay should be given for equal work the machinery, local and central, of the Association has been put into operation, and as a result the authority has generally seen fit to drop the proposed distinction between men and women practitioners or give up the attempt to fill the post.

DEGREES FOR PRACTITIONERS.

AT one time it was almost the universal custom for medical students educated in London and aiming at general practice not to seek a university degree, and as that custom still prevails to a considerable extent a large proportion of medical men in England possess diplomas or licences to practise but not degrees in medicine. This is a fact which they sometimes find reason to regret, and to such practitioners the following paragraphs may be of interest. It should be noted, however, that the M.D.Brussels diploma, if obtained subsequently to June, 1886, is not registrable, and that the University of Brussels no longer holds special examinations for foreign medical practitioners.

UNIVERSITY OF LONDON.

Registered medical practitioners who have passed the First Examination for medical degrees and the Second Examination for medical degrees, Part I, may proceed to the Second Examination for medical degrees, Part II, and M.B., B.S. Examinations without observing the intervals prescribed by the regulations, on producing certificates that they have gone through the required course of study at a school of the university; subject to the proviso that no degree of the university can in any circumstances be granted by examination to anyone in less than three years after passing the Matriculation Examination or after admission by the university of the candidate's right to exemption therefrom.

Persons over the age of 25 years who have not entered for the ordinary Matriculation Examination of the University but hold certain definite professional qualifications may be admitted to a special Matriculation Examination in four subjects, of which mathematics or logic must be one. This

Professional Matriculation Examination is open to ministers of religion, barristers and solicitors, medical practitioners, registered teachers; also to engineers, architects, surveyors, pharmacists, accountants, auditors, and associates of the Institute of Bankers, holding recognized qualifications conferred after examination. Information should be sought from the Registrar, The University of London, South Kensington, S.W.7.

University of Durham.

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice for that period, upon the following conditions, without residence: The candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. Should he not have passed an examination in arts previously to the professional examination in virtue of which his name was placed on the *Register*, he is examined in classics and mathematics; if otherwise, he is required to translate into English passages from any one of the following Latin authors: Caesar, *De Bello Gallico* (first three books), Virgil, *Aeneid* (first three books), or Celsus (first three books). Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India must produce evidence from an Indian university that they have passed within one year an examination in Latin.

Professional Examination.—The candidate must pass an examination in the following subjects: (i) Principles and practice of medicine, including psychological medicine, hygiene, and therapeutics; (ii) principles and practice of surgery; (iii) midwifery and diseases of women and children; (iv) pathology, medical and surgical; (v) anatomy, medical and surgical; (vi) medical jurisprudence and toxicology. The examination is conducted by means of printed papers, clinically, and viva voce, at the College of Medicine, Northumberland Road, Newcastle, and in the Royal Victoria Infirmary. The classical part of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

The examinations are held twice a year, towards the end of March and of June. Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Registrar of the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty-eight days before the commencement of the examination.

Fees.—The inclusive fee is 50 guineas; if a candidate fail to pass, 20 guineas are retained, but if he present himself again, 40 guineas only are required.

University of Brussels.

Until recently this university granted its M.D. to such foreign candidates as were already duly qualified in medicine and surgery in their own countries, provided they passed the three special examinations imposed. The examinations were conducted viva voce. The University of Brussels, however, announced two years ago that these special examinations would no longer be held, nor would the M.D.Brussels diploma be granted by the university to foreign medical practitioners as formerly. Nevertheless, we are informed by the Secretary of the University, Dr. Jean Willems, that it is still possible for a foreigner to obtain in Brussels a diploma of "Docteur en médecine, chirurgie et accouchements," which, although it does not entitle to practise in Belgium, has exactly the same value as the Belgian legal diploma.

For Belgians (Dr. Willems writes) the usual length of studies is seven years: two years of candidature of sciences, two years of candidature of medicine, and three years of doctorate of medicine. But it rests with the Faculty concerned to decide on questions of equivalence of foreign academic records with the ordinary Belgian qualifications for admission to university courses, so that a student who has several years of university training in Great Britain may, on presentation of his certificates or diplomas, be admitted to follow the courses of the first, second, or even third doctorate. I beg to insist on one point which if properly understood may spare your citizens much useless trouble. It happens that English practitioners, already bearers of an M.D. diploma, ask from the Faculty that our degree of doctor be conferred on them *ad eundem* on payment of necessary fees. The regulations of our University absolutely forbid that a diploma be granted to anybody, without at least one year's attendance on the courses.

POST-GRADUATION STUDY.

The Position in England.

It is unfortunate that so far very little success has attended efforts made to establish in England a predominant centre of post-graduate education. There is no lack of material for post-graduation study, and teachers are plentiful. But of real organization capable of affording facilities such as exist even in post-war Vienna there is very little evidence. In any such organization two objects must be held in view; first, provision for study which will attract men of capacity from the Dominions, America, and foreign countries; secondly, courses which will benefit practitioners in this country whether they intend to perfect themselves in special forms of treatment or to bring up to date their knowledge of general subjects in medicine and surgery.

A committee appointed by Dr. Christopher Addison, when Minister of Health, under the chairmanship of the Earl of Athlone, did something to crystallize ideas on the subject of post-graduate education. This committee recommended that a school attached to a hospital centrally situated in London should be devoted solely to post-graduate medical education, that it should be a school of the University of London, and that it should receive financial assistance from Parliament. On the other hand, many have held that a hospital entirely devoted to post-graduate students need not for the moment be regarded as essential to a post-graduate scheme; and that a central co-ordinating body for post-graduate students might, with the material already available, lay the foundation of a scheme of which a post-graduate hospital might ultimately come to be the centre.

These views have been discussed by the Fellowship of Medicine, a body which arose in 1918 for the purpose of drawing together the members of all the inter-allied countries for the exchange of medical knowledge and the advancement of medical science. The Fellowship of Medicine arranged a post-graduate course in the early part of 1919 for the benefit of medical men who had served as temporary officers in the Royal Navy, the R.A.M.C., the Royal Air Force, and from the Dominions, the United States, and the allied countries. The Fellowship of Medicine was amalgamated with the Post-Graduate Medical Association in October, 1919, and since that date the combined body has applied itself to the problem of establishing a predominant post-graduate institution in London. It cannot, however, be said that its efforts so far have brought it within sight of success. The main result of its deliberations up to the present has been a reconstitution of the Fellowship of Medicine as representative of a number of hospitals which are not engaged in undergraduate teaching. While the reconstituted body will doubtless be of great value in meeting the needs of practitioners in this country, it is hardly likely to carry the prestige which will place England in the forefront as a centre of post-graduate education.

So far, however, as medical practitioners in this country are concerned, whether they be newly qualified or wishful to refresh their knowledge or to embark on special treatment, the facilities offered are numerous and varied, even if somewhat unco-ordinated. The Fellowship of Medicine, in addition to possessing an office, kindly housed at the Royal Society of Medicine, 1, Wimpole Street, for the provision of information regarding post-graduate facilities, has organized courses of instruction at various hospitals scattered about London. The monthly *Bulletin* of the Fellowship contains a list of the hospitals which welcome the attendance of graduates. For those who desire to revise or increase such medical knowledge as is useful in their professional work, the West London Post-Graduate College and the North-East London Post-graduate College are eminently suitable. Some of the large undergraduate teaching hospitals provide short post-graduate courses for their former students during the summer vacation. The London Panel Committee arranges with Guy's Hospital for periodical courses of demonstrations lectures to be given to insurance practitioners, and at Charing Cross Hospital weekly post-graduate classes are held. At the London Hospital there are courses in connexion with school clinics. Courses in special diseases are obtainable at a large number of special hospitals, a list of which is printed in the *Handbook for Recently Qualified Practitioners*, issued by the

[1] *Handbook for* ... Association, 429,

British Medical Association.[1] Many of these hospitals are of world-wide renown, and are attended by post-graduate students from all parts of the world. Special note may perhaps be made of the London School of Tropical Medicine, Endsleigh Gardens, N.W.1, and the Maudsley Hospital, Denmark Hill, S.E.5.

Fellowship of Medicine and Post-Graduate Medical Association.

Under the auspices of the Fellowship of Medicine regular "refresher" courses in general medicine and surgery, each lasting two weeks, are held once a month at the various metropolitan post-graduate hospitals. The fee for each course is 7 guineas. Courses in special subjects—ophthalmology, diseases of children, proctology, diseases of heart and nervous system, gynaecology, etc.—are given from time to time at the various special hospitals. Particulars of these courses can be obtained from the secretary. The Fellowship issues a monthly *Bulletin* containing a programme of the work in the various hospitals, specifying the names of teachers or lecturers, together with the time and place at which their instruction is given. This list is arranged under the headings of the various sections of the course—for example, diseases of the chest, ophthalmology, radiology, venereal diseases, etc. Announcement is also made of special courses of clinical lectures, some of which are occasionally held out of London.

Special courses in general medicine and surgery, cardiology, dermatology, diseases of children, ophthalmology, proctology, and other subjects have been arranged up to June, 1924, by the Fellowship of Medicine and Post-Graduate Medical Association. The programme for this month includes a two weeks' course in general medicine and surgery, from September 10th to 22nd, at the Hampstead General Hospital, in conjunction with the Hospital for Epilepsy and Paralysis, Maida Vale, the North-Western Fever Hospital, and Paddington Green Children's Hospital. There will also be a special course of instruction in infants' diseases at the Infants' Hospital, from September 3rd to 21st, a course in ophthalmology at the Central London Ophthalmic Hospital, from September 3rd to 29th, and a course in dermatology at St. John's Hospital for Diseases of the Skin, from September 17th to October 13th. Particulars of the courses may be obtained from the Secretary of the Fellowship of Medicine.

The offices of the Fellowship are at 1, Wimpole Street, W.1 (telephone Mayfair 2236). The Secretary, Miss M. A. Willis, is in attendance daily from 10 a.m. to 5 p.m., excepting Saturday. The annual subscription for membership of the Fellowship of Medicine and Post-Graduate Medical Association has been fixed at a minimum of 10s.

Provincial Courses.

In the Provinces post-graduate courses have been organized in connexion with the universities at Birmingham, Bristol, Edinburgh, Manchester, and Oxford, and through the Post-Graduate Medical Association at Glasgow. Special courses also exist at Cambridge, Durham, Leeds, and elsewhere. Liverpool has its School of Tropical Medicine. Interesting experiments in post-graduate work for practitioners in a locality or trained originally at a medical school may be recorded in the South-West London Post-Graduate Association, St. James's Hospital, Ouseley Road, Balham, in a course at Addenbrooke's Hospital, Cambridge, during the Long Vacation, and in a lightning week-end course at St. Mary's Hospital, Paddington, for old students of the hospital.

It is a matter for satisfaction that the interest in post-graduate medical education is becoming more widespread; and in the development of this interest it is not impossible that the British Medical Association may take a part under the enlargement of the scope of its activities which its new buildings in Bloomsbury will render possible.

Edinburgh Post-Graduate Courses.

In connexion with the University and Royal Colleges post-graduate courses have been arranged this year from July 16th to September 8th inclusive, comprising: (*a*) A Course in Obstetrics and Gynaecology which was held from July 16th to August 10th; (*b*) a Course on Diseases of Children from July 30th to August 10th; (*c*) a General Medical Course; (*d*) a General Surgical Course. Courses (*c*) and (*d*) extend for four weeks from August 13th to September 8th. Similar courses are held each year.

The Course in Obstetrics and Gynaecology comprises instruction in Clinical Midwifery and Clinical Gynaecology, Obstetrics and Gynaecological Pathology, Child Welfare and Ante-Natal Clinics, etc.

The Course on Diseases of Children includes Medical and Surgical Clinics and Special Clinics on Diseases of the Skin, Venereal Diseases, Child Welfare, Mental Defect, Ear and Throat, Dental Clinics, and Ante-natal Clinics. The General Medical Course includes Lecture Demonstrations, and, where possible, practical instruction on Medical Anatomy, Medical Side-room Work, Examination of the Blood, X-Ray and Electrical Therapy, Morbid Anatomy, and *Post Mortems*; Clinical Instruction in Medicine, Diseases of Children, Diseases of the Skin, and Infectious Diseases; and Special Instruction in the Diseases and Methods of Examination of the Nervous, Circulatory, Respiratory, Alimentary, and Renal Systems, and in Diseases of the Ductless Glands. The General Surgical Course includes Lecture Demonstrations on Surgical Anatomy, Surgical Pathology, and Surgical X-Ray Diagnosis; Clinical Instruction in Surgery at the Royal Infirmary and Royal Hospital for Sick Children; Clinical Instruction in Venereal Diseases; Surgical Out-patients; Surgical and Gynaecological Operations and Special Instruction in Abdominal and Genito-Urinary and other branches of Surgery.

A series of Special Lectures, open to all graduates, is being delivered thrice weekly during the month, on subjects of general medical and surgical interest, including recent advances in treatment. The following special courses have also been arranged: Examination of the Blood, Vaccine Therapy, Physiological and Biochemical Methods in Clinical Medicine, Diseases of the Ear, Nose and Throat, and Venereal Diseases.

Particulars regarding the courses, dates of commencing, fees, etc., may be had on application to the Honorary Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

Graduate Medical Teaching in Glasgow.

Organized post-graduate medical teaching is available in Glasgow under the auspices of the Post-Graduate Medical Association. This association is composed of practically all the teaching institutions in Glasgow and the various teachers giving post-graduate instruction, and its business is managed by a board elected periodically by them. The chairman of the board is Principal Sir Donald MacAlister, K.C.B., M.D., and the vice-chairman Sir Hector C. Cameron, C.B.E., M.D. During the winter months special courses in various subjects are conducted, and there is a series of weekly demonstrations specially designed for local practitioners. A comprehensive scheme of Clinical Courses is carried out during the summer months, from May till October, and arrangements have also been made whereby a limited number of graduates may become attached to wards or out-patient departments nominally as clinical assistants for definite periods throughout the year. As such they work under the direct supervision of the physician or surgeon in charge, and carry out such detailed investigations as directed. Those desiring further information should apply to Dr. J. N. Cruickshank, Acting Secretary, Post-Graduate Medical Association, University, Glasgow.

Courses for Medical Graduates at Bristol.

The University of Bristol provides courses of post-graduate study for practitioners. Details of set courses at the Royal Infirmary and General Hospital are announced locally. In addition, practitioners may become clinical assistants in medicine, surgery, or special subjects for periods of a month or more.

The University also holds courses of demonstrations in outlying centres in the West of England. Resident practitioners form themselves into a committee and consider the type and extent of demonstrations required. The University furnishes

[1] *Handbook for Recently Qualified Medical Practitioners.* 1923. British Medical Association, 429, Strand. 2s. 6d. net.

the lecturers and makes all the necessary arrangements. All inquiries should be addressed to the Director of Post-Graduate Studies, Pathological Department, Bristol University.

Daily Post-Graduate Study.

For those who are able to devote several hours each day to hospital practice the university offers special facilities for post-graduate work. Qualified medical practitioners may be appointed as clinical assistants for a period of one or more months. They may act as assistants, if times permit, in more than one department and in any of the hospitals during their period of study. They will be entitled to the use of the clinical laboratories and medical library, and have the right to attend in all departments, including operations, post-graduate and ordinary clinical demonstrations, and *post-mortem* examinations. Fee, £3 3s. a month.

Post-Graduate Clinical Work.

Demonstration courses with weekly lectures are held during May, June, and July. Fee, £2 2s. All inquiries and applications for admission should be addressed to the Director of Post-Graduate Studies (Clinical Section), Pathological Department, University of Bristol, who can be seen on any day by appointment at the Pathological Department.

WEST LONDON POST-GRADUATE COLLEGE.

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men. The college started in 1895; it is provided with lecture, reading, writing, and class rooms, and accommodation of all sorts for the convenience of post-graduate students. In the five years before the war the yearly entry averaged over 220. The work of the college is eminently suitable for men who wish to revive their general clinical knowledge after war work.

As for ward work, the students accompany the senior staff on their visits to the wards at 2.30 p.m. daily, and also go round with the resident medical officers in the morning. Out-patient work begins at 2 p.m. This department is large, and affords ample facilities for post-graduates to see and examine patients. There are the usual special departments. Post-graduates are appointed to act as clinical assistants for three or six months. There is no charge to members of the college. Special practical classes are held in medicine, general practical surgery, gastro-intestinal surgery, medical and surgical diseases of children, analysis of blood and urine, cystoscopy, venereal disease, tropical diseases, retinoscopy, ophthalmic operative surgery, and, when material is available, in operative surgery. The size of the classes is limited. A special clinic for the treatment of venereal diseases (male and female) is held every evening (Saturdays included) at 5.30. Graduates are admitted to the work of the clinic free, and certificates of satisfactory attendance and work are given.

Operations take place at 2 p.m. daily, the surgeons often availing themselves of the assistance of the post-graduates, and in any case making arrangements so that they can readily see what is going on. The anaesthetists give instruction in the administration of anaesthetics, including spinal analgesia, on the operating days, students being allowed to administer them under supervision, while special classes are held in each session. The pathological laboratory is in charge of a pathologist who attends every day.

Demonstrations are ordinarily given in the morning by the assistant physicians and surgeons, and by the medical and surgical registrars.

Fees.—Hospital practice, including all ordinary demonstrations and lectures, £1 11s. 6d. for one week, £4 4s. for one month, £6 6s. for six weeks, £9 9s. for three months, £15 15s. for six months, £23 12s. 6d. for one year, and £45 for a life ticket. Instruction in the administration of anaesthetics is given at the rate of £3 3s. a month.

The certificates of the school are recognized by the Admiralty, the War Office, the Colonial Office, the India Office, and the University of London (for higher degrees). A prospectus can be obtained on application to the Dean.

NORTH-EAST LONDON POST-GRADUATE COLLEGE.

The headquarters of this post-graduate school are situated at the Prince of Wales's General Hospital, in the midst of a densely populated North London district. It contains 125 beds, and is within a few minutes' walk of South Tottenham Station on the Midland Railway, Seven Sisters Station on the Great Eastern Railway, and Tottenham Hale on the Great Eastern main line. It is readily accessible by electric tram from Finsbury Park and Hackney, and from Dalston, Edmonton, and other parts of North London.

The college is recognized by the Admiralty and the India Office for the purposes of study leave, and by the University of London as a place for advanced study for the M.D. and M.S. degrees; the course of practical teaching of bacteriology is approved by the University of Cambridge for its D.P.H. diploma, and there are ample arrangements for the convenience of men who are thus working, or who, being in active practice, are desirous of getting themselves into touch with modern methods. The hospital as a whole affords excellent facilities to qualified medical practitioners who wish to take part for a time in the work of an active general hospital, or to obtain special instruction in the several branches of medicine and surgery, since it is open to them to study diseases of the eye, ear, throat, nose, skin, fevers, children's diseases, psychological medicine, dental surgery, radiography, the application of electricity in disease, and the administration of anaesthetics. Throughout the sessions into which the year's work is divided, clinics, lectures, and demonstrations are given by members of the teaching staff in the lecture room. Operations are performed every afternoon of the week except Saturday. Special classes are arranged in modern methods of the investigations and treatment of disease, and special intensive courses are held at intervals throughout the year, each lasting two weeks, clinical instruction being arranged for each hour of each day.

Fees.—Two guineas for a three months' course of study in any one department, which may be begun at any time; a fee of 5 guineas admits to the whole practice of the hospital for a similar term (one month, 2 guineas, and one year, 10 guineas), and a perpetual ticket for the practice of the hospital may be obtained for 15 guineas.

Additional information can be obtained from the Dean of the Post-Graduate College, at the hospital, or at 39, Harley Street, London, W.1.

AUSTRALIAN AND NEW ZEALAND MEDICAL ASSOCIATION.

Some members of the profession born in Australia or New Zealand and now resident in England have formed an Australian and New Zealand Medical Association to give information and advice to medical visitors from the Commonwealth and Dominions with regard especially to attendance at special clinics, post-graduate work, and facilities for preparing for examinations such as the M.R.C.P., F.R.C.S. (England and Edinburgh), and the D.P.H., and also as to house appointments and clinical assistantships in London and the provinces. Information will also be given as to lodgings, sports, and social opportunities. All medical graduates or undergraduates born in Australia or New Zealand and resident or visiting England are eligible to become members. The fee is one payment of 5s. Further information can be obtained from the joint honorary secretaries, Mr. E. T. C. Milligan, F.R.C.S., and Mr. Redfern Russell, F.R.C.S., 86, Harley Street, London, W.1.

TROPICAL MEDICINE.

THERE are large and important schools of Tropical Medicine in London and Liverpool, and several universities and other examining bodies have instituted diplomas or degrees in the subject. The Colonial Office now expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and commercial firms engaged in tropical enterprise commonly demand from medical applicants for employment corresponding evidence of special knowledge. Information with regard to these schools and diplomas and degrees follows.

DIPLOMAS AND DEGREES.

LONDON UNIVERSITY.—Tropical medicine is one of the six branches in which the M.D. degree may be obtained. The regulations relating to the curriculum and examination correspond to those applying to the other branches.

LONDON CONJOINT BOARD.—This body grants a diploma in tropical medicine to candidates after an examination usually held in the months of April, July, and December. Ordinary candidates must present evidence of having attended, subsequently to obtaining a registrable qualification in medicine, surgery, and midwifery, (1) practical instruction in pathology, protozoology, helminthology, entomology, bacteriology, and hygiene in relation to tropical medicine, in an institution recognized for this purpose, during not less than three months; (2) the clinical practice of a hospital recognized for the study of tropical diseases during not less than three months. These conditions may be modified in the case of candidates who have had practical experience in tropical countries. The fee for admission to the examination is £9 9s. The Board also grants diplomas in psychological medicine and in ophthalmic medicine and surgery. Candidates must hold a medical qualification registrable in the United Kingdom or be graduates in medicine of an Indian, Colonial, or foreign university. Particulars and conditions of admission to these examinations, fees, etc., may be obtained from the Secretary of the Examining Board, Examination Hall, Queen Square, Bloomsbury, London, W.C.1.

UNIVERSITY OF LIVERPOOL.—A diploma in tropical medicine is given by this university to students who have been through the courses provided by the Liverpool School of Tropical Medicine and have passed the examination held twice yearly by the university examiners. The subjects of examination are (*a*) tropical pathology, parasitology, and entomology; (*b*) tropical and applied bacteriology; (*c*) tropical hygiene and sanitation; (*d*) tropical medicine, including etiology, symptoms, diagnosis, and treatment of tropical diseases. Further information can be obtained from the Dean of the Faculty of Medicine, University of Liverpool.

UNIVERSITY OF CAMBRIDGE.—This university grants a diploma in tropical medicine and hygiene to any person whose name has been on the *Medical Register* for not less than a year provided that he passes the examination of the university in this subject. Previous to admission to the examination he must produce approved evidence that he has studied pathology (including parasitology and bacteriology in relation to tropical diseases), clinical medicine and surgery at a hospital for tropical diseases, and hygiene and methods of sanitation applicable to tropical climates. Examinations are held in January and August each year, and last four days. The fee for the examination and diploma is 9 guineas on admission or readmission. Application for further information should be made to Dr. G. S. Graham-Smith, Pathological Laboratory, Cambridge.

SCHOOLS.

LONDON SCHOOL OF TROPICAL MEDICINE.

This school is under the auspices of the Seamen's Hospital Society. The laboratories, museum, library, etc., are within the building of the Hospital for Tropical Diseases, Endsleigh Gardens, N.W.1, and excellent opportunities are afforded to students and others who may be desirous of studying diseases incidental to tropical climates before entering the services or going abroad. In the wards of the Hospital for Tropical Diseases are to be found cases of tropical disease such as may be met with in actual practice in the tropics. There are three courses in the year, lasting three months, beginning September 25th, January 9th, and April 24th approximately. The course is so arranged as to equip men for the Cambridge D.T.M. and H. and the D.T.M. and H. of the Conjoint Board. Tropical Medicine has been admitted as a sixth alternative subject for the M.D. of the University of London, and the school curriculum is adapted to afford facilities for candidates desirous of taking the M.D. in this subject. Further information may be obtained from the Dean, London School of Tropical Medicine, India Office, Whitehall, London, and the Secretary, London School of Tropical Medicine, Seamen's Hospital, Greenwich, S.E.10.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

This school is affiliated with the University of Liverpool and the Royal Infirmary of Liverpool. Two full courses of instruction are given every year, commencing about January 6th and September 15th, lasting for the term of about thirteen weeks, and followed by the examination for the diploma of tropical medicine given by the University of Liverpool. Two courses in veterinary parasitology are also given, commencing about the same dates as the diploma courses. In addition to the full courses, an advanced course of practical instruction in tropical pathology and medical entomology, lasting a month, is given every year in June; it is of such a kind as to be very useful to medical men returning from the tropics on short leave. A special course of instruction in entomology, etc., is also given three times a year to officers of the East and West African Colonial Services. Students of the school who do not care to undertake the examination held by the university at the end of each term for the diploma in tropical medicine are given a certificate if attendance has been satisfactory.

Fees.—The fee for the full course of instruction is 20 guineas, with an extra charge of 1 guinea for the use of a microscope, if required. The fee for the Diploma Examination is 5 guineas, for the Advanced Course 6 guineas, and for the course in veterinary parasitology 15 guineas.

The new laboratories of the school adjoin the university and the tropical ward of the Royal Infirmary. The dimensions of the building are 162 ft. in maximum length by 84 ft. in width. In addition to the basement, in which are accommodated the photographic department and large storage rooms, there are four floors. The ground floor has: (1) Lecture theatre, with accommodation for about seventy students; (2) library; (3) a spacious museum, with preparation room adjoining. The first floor has twelve rooms, in which are housed the Departments of Tropical Medicine and Entomology. The second floor has the main class laboratory, 69 ft. by 58 ft., excellently lighted, and three other rooms, devoted to the Department of Parasitology. The third floor has a large research laboratory and two research rooms. On the roof is an insectarium, a mosquito-proofed house, and other accommodation.

Since it was instituted the school has dispatched to the tropics thirty-two scientific expeditions, many of the workers having been taken from among its students. The work done by them has been published in twenty-one special memoirs, besides textbooks and numerous articles in the scientific press, also in the *Annals of Tropical Medicine and Parasitology* of the school. In connexion with the school are (1) the Manaos Research Laboratory in Brazil, and (2) the Sir Alfred Lewis Jones Tropical Laboratory, Sierra Leone, which was opened on January 10th, 1922. Further information may be obtained from the Hon. Dean, School of Tropical Medicine, Pembroke Place, Liverpool.

PSYCHOLOGICAL MEDICINE.

IT cannot be impressed too strongly upon the medical student that a knowledge of mental disorder is just as essential as a knowledge of the other forms of disease which he will be called upon to treat in the routine of general practice. It must be understood that by the term mental disorder is not only meant those severe forms which are to be found in asylums, but the term also includes mental defectives of all grades; nervous, difficult, and backward children; the mild and often unrecognized psychoses; and also the various types of psychoneurosis. Such disorders provide the general practitioner with a large proportion of his most difficult cases, and he will find a good knowledge of mental disorder invaluable in his work. Apart from general practice, the student who proposes to take up a career in the prison service or, still more importantly, the school medical service, will find a knowledge of psychological medicine an almost essential part of his equipment.

Instruction and Diplomas.

At the present time the instruction given to the student is far from adequate to supply the knowledge of mental disorder requisite for the needs of the general practitioner. The

facilities for the study of psychological medicine in the general hospitals are now much greater than in former years. Thus many of the teaching hospitals have out-patient departments for the treatment of mental cases, and in some of these hospitals special lectures are given on psychopathology. These facilities need not be utilized by the student, however, and the compulsory part of the curriculum is confined to formal lectures and a few attendances at some mental hospital. Here the student is apt to see mainly the terminal states of mental disease, and he is also apt to gain the impression that mental disorder is necessarily related to segregation and custody. We would therefore impress upon him the importance of attending the out-patient department for mental disorders where he will be able to observe the mild and early cases such as he will hereafter meet with in general practice.

The Ministry of Health has recently issued a memorandum by Sir George Newman on *Recent Advances in Medical Education in England*.[1] The inadequacy of the facilities for the teaching of psychopathology is there commented upon, and it is pointed out that the general practitioner must be competent to diagnose all the chief forms of mental disease and defect (Lunacy Act, 1890, Mental Deficiency Act, 1913, Elementary Education (Defective and Epileptic Children) Acts, 1899 and 1914). The certificates under these Acts are shown to necessitate a diagnosis, a record of the clinical grounds for it, and in some cases the medical reasons for detention or custodial care. It is evident, as Sir George Newman points out, that these requirements are sufficiently exacting to render necessary the proper education in this subject of every medical student; and it should be practical and the subject of examination. The curriculum in mental diseases suggested is as follows:

"(i) A short course of lectures in normal psychology, preferably as part of the course in physiology (reflexes, habit, instinct, emotion, intelligence, the conscious and the unconscious mind, Binet tests, investigational methods, etc.).

"(ii) Half a dozen explanatory discourses in abnormal psychology, to be taken concurrently with clinical work in mental disease.

"(iii) Ten or twelve systematic lectures on mental disease, concurrently with clinical work, and clinical demonstration, at a mental hospital of in-patients, pronounced cases (recent or chronic), and the usual types of insanity.

"(iv) A series of demonstrations in the out-patient clinic for nervous and mental disorders at the general hospital.

"What the student needs is instruction in the etiology, symptoms, diagnosis, treatment, and prognosis of the morbid mental states most commonly met in general practice. The student must also be trained in case-taking, the examination of patients dealing with relatives of patients, certification, precautions, etc."

A scheme is now in actual operation at the Middlesex Hospital in which a small number of mental cases are treated in the hospital as in-patients. This is an important move from the teaching point of view, because the student will gain true insight into the relation between mental disorder and medicine as a whole, and he will realize that it is a form of illness to be studied with other diseases and to be treated along similar lines.

In London post-graduate courses of instruction of a comprehensive kind are given at the Maudsley Hospital and at Bethlem Hospital; and at the National Hospital for the Paralysed and Epileptic, Queen Square, courses are arranged to meet the requirements for the diploma in psychological medicine in regard to nervous diseases. Courses in mental deficiency are arranged by the University of London. There are also post-graduate courses at the Universities of Edinburgh, Glasgow, Cambridge, Birmingham, Leeds, Manchester, Durham, and elsewhere. Those who are taking up psychiatry as a career will find it desirable to obtain a diploma in psychological medicine. Such a diploma is not at present compulsory for a permanent position on the staff of a mental hospital, but it will probably become so in course of time, just as it is now essential to obtain the D.P.H. if a career in public health is contemplated. Psychiatry is one of the branches of medicine which candidates for the M.D. degree of the Universities of London and Edinburgh can take up, and, in addition, diplomas in psychological medicine, to which reference has been made, can be obtained from the Universities of Cambridge, London, Edinburgh, Durham, Leeds, Manchester, and the National University of Ireland, and from the Conjoint Board in England. The Medico-Psychological Association of Great Britain and Ireland also grants certificates of proficiency after examination and encourages the study of psychiatry by the offer of prizes for original and research work.

[1] H.M. Stationery Office, 1923. To be purchased through any bookseller. 1s. 3d. net.

Mental Hospital Appointments.

Those who take up psychiatry as a career work as medical officers of public or private mental hospitals or similar institutions. Except in the larger institutions, such as those under the control of the London County Council, where a number of the medical officers are allowed to live out if married, the medical staff are resident officers, having board, lodging, etc., either in the hospital itself or a residence in the grounds. Junior assistant medical officers receive about £300 to £400 per annum, and senior assistant medical officers about £500 to £700, in both cases with board, lodging, laundry, etc., in addition; if married, the board, etc., is commuted for cash. As the mental hospitals are under local control the salaries vary much in different asylums. Medical superintendents, whose pay commonly ranges between £800 and £1,500 per annum, are provided with a house in the grounds of the hospital and draw various allowances.

Since the passing of the Asylum Officers' Superannuation Act in 1909, all officers and others of the established staff of a public (county or borough asylum) mental hospital may retire at the age of 55 on a pension varying from one-half to two-thirds of the value of their pay and emoluments, or one-fiftieth for every year served, paying as contribution 3 per cent. of the value of their appointments annually. This very favourable prospect may not appeal to junior practitioners joining the services, but will eventually prove to be a valuable asset.

Prospects in the Public Service.

Appointments to the public mental hospitals are made by the Visiting Committees, and in most cases only the junior posts are open to those who have not had previous experience in psychiatry. Since the public mental hospital service is a local and, except indirectly, not an imperial one, the promotion tends to be slow and uncertain, and the higher positions are not always advertised and thus thrown open to competition. For this and other reasons mental hospital work has undoubtedly not been in favour with newly qualified men in years past, but the general conditions of service have tended to show a progressive improvement and will in all probability continue to do so in the future.

In March, 1920, the Board of Control did useful service by issuing to visiting committees of asylums a circular upon the three following matters: (*a*) the dearth of suitable applicants when vacancies occur for the post of assistant medical officer, and the probable causes thereof; (*b*) the need of provision for the more effective treatment upon modern lines of recoverable cases of mental disorder; (*c*) the necessity for raising the standard as to the training of existing and future assistant medical officers in asylum practice, and of affording facilities for such training.

Under (*a*) the Board of Control, after pointing out some of the disadvantages of the present state of affairs, made the following suggestions:

(i) That an improvement be made in the salaries of the assistant medical officers, at least to such an extent that in the cases of all those who have been in the service above a certain number of years and are regarded as permanent officials, the salary should be reasonably sufficient for a married medical man, and that in the case of the deputy superintendent it should more closely approximate than at present to that of the superintendent.

(ii) That, in the case of a permanent official, application for permission to marry be not required; that, according to circumstances, proper accommodation for a married man be provided, and that subject to rules approved by the Secretary of State for the protection of the patients, and with due regard to the proper administration of the institution, permission to live out may be granted.

(iii) That to the title of assistant medical officer the words "and deputy superintendent" should be added to that of the one selected to be in charge during the absence of the medical superintendent.

(iv) That the use of the title "senior assistant medical officer" should not be restricted as at present to the post of first assistant, but should be extended and be indicative of a certain standing and

expert knowledge. By the adoption of this suggestion there would in many asylums be two senior assistant medical officers, and perhaps even three or four in the largest asylums.

(v) That except where there has been previous asylum experience, appointments to posts of assistant medical officers should in the first instance be temporary in character.

Under (*b*) the Board suggested that the treatment of recent recoverable cases should be carried out by members of the medical staff conversant with modern methods, and that the number of the medical staff should be sufficient to ensure that none of them is required to undertake the treatment of more than fifty recent cases at any one time. Under (*c*) suggestions were made with a view to encouraging assistant medical officers to obtain a diploma or degree in mental diseases, including provision for study leave on full salary. The attitude of the Board of Control is clearly shown in the following sentence:

"If the welfare, treatment, and recovery of patients is not to be jeopardized and the study of mental diseases is not to lag behind the study of other branches of medicine, the Board feel the necessity of initiating measures to maintain progress and to secure the best possible treatment of the patients."

Both the British Medical Association and the Medico-Psychological Association are working separately and together to improve present conditions of service, and have, for example, already removed the "celibacy" objection to the service. The salaries have also been considerably increased, especially in the junior ranks, and contrast favourably with those which were paid before the war. During the next few years considerable progress may be anticipated in the conditions under which the insane are treated. The asylums will tend to develop an atmosphere approximating more closely to that of the general hospitals. If these most desirable changes are brought about, the mental hospital service will become more attractive, and will afford greater opportunities for the medical graduate who proposes to specialize in psychiatry.

It may be said that while routine, administrative, and clerical work bulk largely in mental hospital duties, as they do in other public medical services, there is ample material, time, and scope for purely medical work and research—difficult as the subject may be—in psychiatry as one of the branches of medicine open to young graduates. If the Mental Treatment Bill passes into law, psychiatric work will undoubtedly become still more attractive to medical men. In this bill power is given to local authorities to make provision for the treatment of early and acute cases of mental disorder without certification. When this bill comes into operation hospitals, either in the precincts or the grounds of the county or borough mental hospitals, or in adjacent towns, will tend to be erected in course of time; or wards in general hospitals may be utilized for the same purpose. Such clinics would render appointments in mental hospitals more attractive, because the work would be entirely free from the custodial aspects of mental disorder, and attention could be given by the physician to purely medical problems without irksome legal restrictions.

Maudsley Hospital, Denmark Hill.

A number of courses of instruction for the Diploma in Psychological Medicine have been given at the Maudsley Hospital, the details of the last course being as follows: The course consisted of two parts, Part I being conducted by Sir Frederick Mott, Dr. F. Golla, and Dr. Henry Devine. Sir Frederick Mott gave eight lectures on the anatomy of the nervous system, followed by practical instruction and demonstrations on methods of staining nervous tissue and preparing it for microscopical examination; microscopic sections were distributed, illustrating the principal diseases of the nervous system, for mounting as a permanent collection. Dr. Golla gave eight lectures on the physiology of the nervous system, followed by practical instruction and demonstrations on physiological chemistry (including the chemistry of the nervous system, physico-chemical methods, blood and urine analysis, and gastric contents analysis), and practical physiology (including the recording of reflexes and tremors in man and the action of drugs on the autonomic system). Similarly, Dr. Devine gave eight lectures on psychology, followed by practical instruction and demonstration of psycho-physical methods and memory and intelligence tests. In Part II of the course Sir Frederick Mott gave six lectures on the pathology of mental diseases, including brain syphilis, its symptomatology and treatment. Dr. Bernard Hart gave eight lectures on the psychoneuroses. Sir Frederick Mott and Dr. F. Golla gave twelve clinical demonstrations in neurology; the first six demonstrations were given by Dr. Golla at the Hospital for Paralysis and Epilepsy, Maida Vale. Dr. F. C. Shrubsall gave eight lectures on the practical aspect of mental deficiency. Dr. W. C. Sullivan, medical superintendent of Broadmoor Asylum, gave six lectures on crime and insanity. Dr. C. Hubert Bond and Dr. E. Mapother gave a course of lectures on the differential diagnosis and treatment of mental disorders and the legal relationships of insanity. The fee for the whole course (Part I and Part II) was 15 guineas, or for either part separately 10 guineas; for one single series of lectures in Part I the fee was 4 guineas, and in Part II 2 guineas. Inquiries as to lectures, etc., should be addressed to the director of the pathological laboratory, Maudsley Hospital, Denmark Hill, S.E.5.

Bethlem Royal Hospital.

A course will be held at Bethlem Royal Hospital, commencing on September 17th, of lectures and practical instruction for the Diploma in Psychological Medicine. It is proposed in future to give two courses each year—an autumn session of intensive character, commencing in September, and completed in early December, and a spring session, commencing in the middle of January and completed in the middle of April. Each course consists of two parts: Part A includes lectures and demonstrations on the anatomy, histology, and physiology of the nervous system, with lectures on psychology and demonstrations in experimental psychology. Part B comprises lectures and clinical demonstrations in psychology, including lectures and demonstrations in the morbid anatomy of the nervous system, a series of lectures, with clinical demonstrations, on different branches of psychological medicine, and lectures, with clinical demonstrations, on mental deficiency. Entrants for the course who pay a composition fee of 15 guineas may, if due notice is given, attend either Part A or Part B of one course and postpone the other part until the next session. An entrant who wishes to attend one part only pays a fee of 10 guineas. An entrant who takes the complete course can attend the general clinical practice of the hospital on payment of 5 guineas for six months, or 10 guineas for one year, but an entrant who does not take either part of the course and desires to attend the clinical practice of the hospital must pay a fee of 5 guineas for each three months of attendance. To enable post-graduates to obtain special experience in this branch of medicine clinical assistants are appointed from time to time. Further particulars may be obtained from the physician-superintendent, Bethlem Royal Hospital, S.E.1.

National Hospital for the Paralysed and Epileptic, Queen Square.

A post-graduate course, which fulfilled the requirements of the regulations for the Diploma in Psychological Medicine in regard to instruction in nervous diseases, was held at the National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W.C.1, from May 7th to June 29th, 1923, and other courses will be duly announced. Dr. J. G. Greenfield delivered lectures on the pathology of the nervous system, various clinical lectures and demonstrations were given, and out-patient clinics were held at the hospital on the afternoons of Mondays, Tuesdays, Thursdays, and Fridays. An inclusive fee of 10 guineas was charged for the whole course, but any part of the course could be taken separately at a special fee. A special arrangement was made for those unable to attend the whole course, and for details applications should be made to the dean of the medical school. Similar courses are held three times a year—namely, January, May, and October. Special arrangements are made throughout the year for work in the laboratory. Fees are payable to the secretary of the hospital on entering for the course.

PUBLIC HEALTH SERVICES.

General Considerations.

THE Public Health Service, to use the term in a strict sense, consists of medical officers of health appointed by local public health authorities and holding office under varying conditions of tenure. In addition there are county medical officers appointed by the county councils. The latter are not, strictly speaking, public health authorities; the duties of their medical officers are somewhat similar to those of other medical officers of health, but, in England, include few executive functions. In many of the county boroughs and counties assistant medical officers of health or assistant county medical officers are appointed, and such appointments may afford stepping-stones for promotion to higher offices. The service is, however, not unified throughout the country, and there is no regular system of promotion; appointments are to be obtained only by application to some particular local authority which has advertised a vacancy.

Three other services also ungraded have been brought into existence by recent legislation; their members are charged with duties which bring them into more or less direct relation with public health authorities or county councils and their officers. They are school medical officers, tuberculosis officers, and venereal disease medical officers. Appointments as school medical officer are made by local education authorities, while appointments as tuberculosis officer and venereal disease officer are made by the county councils and the county borough councils.

The medical department of the Ministry of Health for England has been organized under the control of a chief medical officer who has the status of an assistant secretary; it contains six sections, with a senior medical officer at the head of each. These sections are concerned with general health and epidemiology, maternity and child welfare, tuberculosis and venereal disease, the supervision of food supplies, and sanitary administration in relation to infectious disease. There is a separate section concerned with insurance practitioners. Lastly, there are medical officers employed in the Poor Law department and several whose services are available for special purposes but who are not "established" officers. Medical officers and medical inspectors are also employed by the Ministry or the corresponding Board in Wales and in Scotland. Appointments to these posts are not open to public competition; they are made by the Minister of Health in England and Wales and by the corresponding head of the department in Scotland. They are civil service appointments, and come under the superannuation scheme of the service.

Medical Officers of Health in England and Wales.

The first appointments of medical officers of health were made for limited periods, the holder of the office having to risk re-election at the expiration of his term of office. This pernicious practice, so far as it applies to whole-time officers, owing to the persistent endeavours of the British Medical Association, in co-operation with some other bodies, ceased to exist after April 1st, 1922, as regards medical officers of health appointed prior to May 1st, 1921; it is not in operation as regards those appointed after the latter date. The Public Health (Officers) Act, 1921, which was promoted by the British Medical Association, provides that a whole-time medical officer of health shall not be appointed for a limited period, and shall not be removed from his office except with the consent of the Minister of Health. This Act came into operation on April 1st, 1922, but an order of the Minister of Health dated April 12th, 1921, makes a similar provision with respect to those officers appointed after May 1st, 1921.

A medical officer of health who does not devote his whole time to the duties of his office, and a portion of whose salary is obtained from Exchequer grants, may be appointed without limit of time, in which case he cannot be removed from office without the consent of the Minister of Health. If he is appointed for a specified term, say one year, he continues to hold office from year to year unless the Minister consents to his removal or the electing authority gives him three months' notice to resign his office, but the notice must take effect at the same period of the year as that at which the original term of appointment expired. Where the electing body pays the whole of the salary of a medical officer of health he may be dismissed from office without reference to the Minister of Health.

An increasing number of local authorities have established schemes for the superannuation of their officials, but there is no general scheme throughout the country. During the past twenty years the British Medical Association has on several occasions succeeded in getting introduced into Parliament a bill providing for the superannuation of medical officers of health, but the measure has always been opposed by the Government of the day, latterly on the ground that all municipal officers should be superannuated, and that sectional legislation was undesirable. In this connexion it may be stated in passing that medical officers of health are the only State-paid (whole-time) medical officers who do not come under a superannuation scheme.

A medical officer of health of a county or of a district or combination of districts with a population of more than 50,000 persons must hold a diploma in public health. This diploma is now generally required from all applicants for whole-time appointments of medical officers of health and assistant medical officers of health, and very frequently in the case of school medical officers, tuberculosis officers, and venereal disease officers. A medical man who desires to enter the public health service as a career must as a first step obtain such a diploma.

Position in Scotland.

The above statement applies specially to England. In Scotland the position is different in several respects. The central authority is a Board of Health which has at present four members, with offices in Edinburgh. One of the four is a medical man. It is now proposed to reduce the membership to three as existing appointments expire, and to abolish the qualifications of future members, so that not one of the three need be medical.* The "Board" system is the rule in central government north of the Tweed, there being also Boards of Agriculture, Fisheries, Education, and Control (of lunatics). The Secretary for Scotland, whose chief office is in Whitehall, is over all, and there is a Parliamentary Secretary. Both of these are members of the Board, the Secretary for Scotland being President, and one of the Edinburgh members Vice-President. The Board has a staff of medical officers and of referees for insurance work. Under the Public Health (Scotland) Act, 1897, no one can be appointed as medical officer of health for any area, burghal or rural, however small, unless he possesses a diploma in public health. One result is that small burghs often appoint the county M.O.H. as their officer. No medical officer or sanitary inspector can be removed from office except with the sanction of the Board of Health. A "proper" salary must be paid, and it is incompetent for the local authority to bring about a resignation by indirect means, such as reducing a salary, or attaching conditions to the appointment. The Act says nothing about superannuation, and specifies no retiring age. The appointment, however, is not *ad vitam aut culpam*. Most counties in Scotland are smaller than in England, and the county medical officer is also district medical officer, being therefore both administrative and executive in function. A few counties are not divided into districts.

The School Medical Service.

School medical officers are appointed by local education authorities under schemes of medical inspection of school children which must be approved by the Board of Education. Primarily their duty is to detect among the children attending the public elementary schools any physical or mental defect which may retard the education of such children, and to inform their parents of its existence. But practically their duties vary considerably in different areas. This is because most approved schemes of inspection include systems of work which aim at facilitating the task of parents in obtaining for their children the necessary treatment, at checking the results of the latter, and at keeping each defective child under skilled observation both at home and at school until it has passed altogether out of the education authority's hands. The general object of all schemes alike is to ma

* See BRITISH MEDICAL JOURNAL, August 18th, 1923, p. 293.

the inspection imposed by law of benefit not merely to the individual child but to the community at large, by preventing conditions which lead to the existence of a large proportion of inefficient citizens among the adult population. In short, the work is so far related to that of a medical officer of health that in most areas the senior school medical officer fills both appointments, his work, when necessary, being supplemented by that of whole- or part-time assistants. Whole-time assistants are commonly paid salaries commencing at a minimum of £500 a year, the chief attraction of the posts being that they may lead on to appointment as medical officer of health, but we fear that not many actually do reach that position. Yet it is desirable for a prospective whole-time school medical officer to obtain a diploma in public health. In some counties and county boroughs it is now the practice for the officer to undertake certain minor ameliorative work, notably prescription of glasses when necessary, the removal of adenoids, and treatment in connexion with certain diseases of the skin. The added interest thus given to the work appears to make for increased efficiency and also enhances the value of the post. Otherwise the monotony of filling up record cards in the absence of any duty of treatment is apt to become intolerable, and if no public health functions belong to the post it gives little chance of developing into a health officership.

Tuberculosis Officers.

Before sanatorium benefit was transferred to the public health authorities the prescribed duties of tuberculosis officers were to act as advisers to Insurance Committees in connexion with the operation of the National Insurance Act and to take charge of the work of the tuberculosis dispensary, which is the main unit of the Departmental Committee's scheme. A tuberculosis officer is a whole-time officer, who should have special training in tuberculosis work, and be of suitable age and attainments to command general confidence. At present the number of appointments is small, and the salary generally attached to them is about £500 a year with an occasional bonus addition. In many instances they are now appointed on the staff of the medical officer of health, so that the work of prevention and cure of tuberculosis may be made part of the general health work of the Municipal Council.

Venereal Disease Medical Officers.

Schemes for the diagnosis and treatment of venereal disease are administered by county councils and county borough councils. A few of these authorities have appointed whole-time medical officers at a salary of £600 to £700 per annum. In some cases the officer is on the staff of the medical officer of health and in others he is an independent official. Specialized practical experience in the treatment of venereal disease is essential, and it is an advantage if such experience has been obtained in the navy or army. His duties usually include not only the diagnosis and treatment of cases of venereal disease at one or more central clinics, but also the instruction and supervision of the treatment by general practitioners attached to local clinics.

Diplomas in Public Health.

New rules for study and examination for these diplomas come into force on January 1st, 1924, but it will be convenient in the first place to state the present position. Most of the universities and licensing corporations now grant diplomas in public health to candidates who pass the examinations imposed by them. Since all such tests must conform to the requirements of the General Medical Council, there is considerable similarity in their nature, though they differ not a little in their reputed difficulty. All of them aim at excluding any candidate who does not appear to have a thorough knowledge of his work in theory and in practice, for the regulations of the General Medical Council demand that the granting of a diploma in Sanitary Science, State Medicine, or Public Health shall be proof of the "possession of a distinctly high proficiency, scientific and practical, in all the branches of study which concern the public health." The tests, in short, are supposed to constitute an honours and not a mere pass examination. As regards the special tuition required, it is now easy to obtain this in practically every centre of medical education, and at almost every medical school of any importance. It is desirable to note in this connexion that the chemical and bacteriological examinations for many of the health diplomas are so practical, and the time allowed so short, that unless a candidate—even though familiar with the duties of M.O.H.—has a considerable amount of manipulative dexterity only to be acquired by ample work in a laboratory, he would not be likely to satisfy the examiners.

Existing Rules.

The present rules of the General Medical Council remain in force until January 1st, 1924. They require that every candidate (subsequent to obtaining a registrable qualification in medicine and surgery) shall have passed through a stated curriculum in the subjects of sanitary science. This must last not less than nine calendar months, and include four months' study in a laboratory in which chemistry, bacteriology, and the pathology of diseases of animals transmissible to man are taught, six months' practical study of the duties involved by public health administration, and attendance at least twice weekly for three months on the practice of a hospital for infectious diseases at which instruction is given in methods of administration. These rules do not apply to practitioners registered or entitled to be registered before January 1st, 1890, while that regarding six months' practical study of public health administration is waived in the case of a candidate who has himself been in charge of a sanitary district with a population of not less than 15,000 for a period of not less than three years. The study in question must be passed under the personal supervision of a medical officer possessing certain definite facilities for affording it, these being carefully described in the regulations. The period may be reduced to three months in the case of a candidate who has undergone a corresponding period of study in the public health department of a recognized medical school, or who has been resident medical officer at a hospital for infectious diseases with accommodation for 100 patients for not less than three months. The laboratory study must include at least 240 hours' work, not more than half being devoted to practical chemistry. The examinations imposed by the diploma-granting bodies must extend over not less than four days, one at least being devoted to practical work in the laboratory, and one to practical examination in, and reporting on, subjects within the duties of a medical officer of health, including those of a school medical officer.

The steps which examining bodies take to ascertain the candidate's fitness for a diploma are in all cases much the same, though the order in which the subjects are taken is not always identical. Every candidate therefore should, when he has settled what diploma or degree in State medicine he wishes to obtain, seek the schedule relating to it from the authority concerned. A certain number of the universities grant degrees in the subject as well as diplomas.

The New Rules.

The new Rules will apply after January 1st, 1924. They require that not less than two years shall elapse after obtaining a registrable qualification before admission to the Final Examination for a public health diploma. The curriculum shall extend over not less than twelve calendar months. At least five months must be given to practical laboratory instruction in an approved institution in (*a*) bacteriology and parasitology, including entomology, especially in relation to diseases of man and to those transmissible to man from the lower animals (180 hours); (*b*) chemistry and physics in relation to public health (90 hours); and (*c*) meteorology and climatology (10 hours). Not less than 80 hours' instruction in an approved institution, or by approved teachers, must be given to the following subjects, the approximate hours being as bracketed: Principles of public health and sanitation (30), epidemiology and vital statistics (20), sanitary law and administration (20), sanitary construction and planning (10).

There is required three months' attendance—30 daily attendances of not less than two hours in each week—on the clinical practice of a recognized hospital for infectious diseases, with instruction in methods of administration. Six months' practical training under a medical officer of health is an important feature of the new scheme, and the time cannot be reduced by attendance on lectures as at present. Three hours on each of sixty working days are the minimum, and the instruction is to include maternity and child welfare, the services relating to school life, venereal disease and tuberculosis, industrial hygiene, and food, meat, and milk inspection.

The examination will consist of two parts, each lasting for at least two days. Part I covers bacteriology, parasitology (with medical entomology), chemistry, physics, meteorology, and climatology. Part II includes hygiene and sanitation, epidemiology and infectious diseases, sanitary laws and vital statistics, and public health administration. There will be practical examinations in infectious diseases, food inspection, and inspection of premises. Neither part can be entered on until the relative courses of instruction (after registration in medicine) have been completed, and Part I must be passed before admission to Part II.

THE PUBLIC SERVICES.

THE ARMY, AIR FORCE, AND INDIAN MEDICAL SERVICES.

THE Medical Departments of the Royal Navy, of the Army, and the Indian Government normally employed between them before the war some 3,000 medical men, and vacancies in the ranks of these services were filled by offering commissions for competition once or more each year. In the abnormal circumstances arising out of the war and the period immediately following it the usual regulations for recruiting the permanent medical staff of these services were, for the most part, in abeyance. Now that a return has been made to peace establishments we publish somewhat fuller information than we gave during the war period, for the guidance of those junior members of the profession who think of applying for regular commissions in the Royal Air Force Medical Service and the Royal Army Medical Corps. Further details should be sought from the respective medical departments. The usual information regarding the conditions of service, pay, and prospects in the Medical Department of the Royal Navy is omitted for the reasons stated at page 394.

ARMY MEDICAL SERVICE.

Competitive examinations for commissions into the Royal Army Medical Corps are held twice a year, usually in January and July.

The prospects of the newly qualified medical man taking up the army as a career have been improved by changes that have come into force since the war. The rates of pay and pension are given in the subjoined tables; they compare favourably with those that obtained in 1914.

Pay and Allowances.

	At Home.		In India.
	Married. £ per annum.	Unmarried. £ per annum.	Rupees a Month.
Lieutenant	625	541	650
Captain	751	657	800
Captain after 6 years' service	769	675	900
Captain after 10 years' service	824	730	950
Major	897	818	1100
Major after 15 years' service	983	909	1250
Major after 18 years' service	—	—	1400
Lieut.-Colonel	1170	1091	1550
Lieut.-Colonel after 20 years' service ...	1216	1137	1650
Lieut.-Colonel after 25 years' service ...	1262	1183	1850
Colonel	1489	1422	"According to appointment."
Major-General	2163	2091	

Allowances vary slightly from time to time.

At Home.—An officer under the rank of lieutenant-colonel holding an appointment as specialist receives 2s. 6d. or 5s. a day (according to subject or group of subjects). An officer in charge of a hospital receives charge pay, the daily amounts being: in excess of 50 beds, 2s. 6d.; in excess of 150, 5s.; in excess of 300, 7s. 6d.; in excess of 500, 10s. An officer in charge of a medical or surgical division of a general hospital with not less than 300 beds receives half these rates. Senior Medical Officer Royal Arsenal not exceeding 10s. a day. Officer in Command of the Dépôt R.A.M.C. 5s. daily. Adjutant R.A.M.C. Dépôt 5s. daily. Adjutant R.A.M.C. (T.A.) 2s. 6d. daily. Professors at the Royal Army Medical College receive £200 and assistant professors £80 a year, in addition to pay and allowance of their rank.

In India.—The specialist pay is 60 rupees a month; charge pay is from 60 to 240 rupees a month, according to the size of hospital.

Retirement.

A lieutenant-general or major-general must retire on attaining the age of 60 years, a colonel at 57, and other officers at 55. A major superseded for promotion retires on the completion of twenty-five years' service, or, if he fails to qualify for promotion, on the completion of twenty years' service. A captain who fails to pass the examination for promotion to major on a second trial must retire at once with any gratuity for which he may be eligible, or, if not, on completing five years' service. A lieutenant who does not qualify for promotion within three and a half years is required to resign. A candidate who has been specially employed in consequence of a national emergency, either as an officer or in a position usually filled by an officer, will be allowed to reckon such service towards retired pay and gratuity. The maximum rates of retired pay are as follows:

Captain and Subaltern	£300
Major	£450
Lieutenant-colonel	£600
Colonel	£800
Major-General	£1,000
Lieutenant-General	£1,200

Voluntary retirement on retired pay is not allowed until after twenty years' service. Earlier retirement on gratuity is allowed as follows:

Major or Captain:	Gratuity.
After 8½ years' commissioned service ...	... £1,000
,, 3 years' service in the rank of major	... £1,800
,, 6 years' service in the rank of major	... £2,500

Seconded Service.

An officer may be permitted to accept employment in the Foreign or Colonial Offices; when so seconded he is not eligible for pay or allowances from army funds, but his service continues to reckon towards promotion and, under certain conditions, towards increase of pay, pension, or gratuity. Among the capacities in which R.A.M.C. officers may be employed are:

(1) The medical service of the Egyptian Army.
(2) The sanitary service of the Egyptian Government.
(3) The medical services of the various foreign and colonial Governments.

Service on the West Coast of Africa.

Officers for service in West Africa are usually taken from a list of volunteers for such service. An officer at present receives, while actually serving in West Africa (which service may include ordinary leave not exceeding sixty-one days in a year, and any time spent at Madeira or the Canary Islands on sick leave), additional pay at the following daily rates: lieutenant-colonel 12s., major 9s., captain 7s. 6d., lieutenant 6s.

The professional work of the corps has received a great impetus through the Directorates of Hygiene and Pathology. Specially selected and trained officers have now been appointed as assistant and deputy assistant directors of hygiene to all commands and garrisons at home and abroad. Junior officers appointed on probation undergo a course of instruction in hygiene at the army school of hygiene, where lectures and demonstrations are given on the methods of sanitation, including entomology, applicable to the various climates and countries, special attention being paid to tropical hygiene.

The Directorate of Pathology offers many attractions to those officers who are desirous of taking up the scientific side of medicine. Officers who show aptitude in this direction are encouraged to continue their scientific studies during the whole course of their service. As junior officers the posts of clinical pathologists to hospitals at home and abroad are available, while, after their first tour of foreign service, they are given the opportunity of qualifying as specialists in bacteriology and pathology at the Royal Army Medical College; having so qualified they become eligible for the appointments of assistant or deputy assistant director of pathology, posts which carry with them specialist pay or temporary promotion.

Appointments to the staff of the Directorate of Hygiene or Pathology at the War Office are open to officers who have served in these scientific branches—the senior posts carrying the rank of colonel or major-general as the case may be. All such staff appointments, either at the War Office or in commands at home, have a fixed tenure of three or four years should the exigencies of the service permit.

Arrangements have been made for the appointment of consultants in both medicine and surgery, and the ranks of colonel and major-general are now open to such officers. This will encourage officers of outstanding ability in these subjects to continue to devote their attention to medicine and surgery, in which previously there were no openings for officers above the seniority of lieutenant-colonel.

The question of specialists has also undergone review and a great improvement in the method of training and selection has been affected. Captains undergo a five months' course at the Royal Army Medical College for promotion to major in the subjects of hygiene and pathology, together with general medicine and surgery. Of those officers who pass the Combined Examination in these subjects, the first 50 per cent. are now eligible to take out a further four months' specialist training, provided that they can prove to have had past experience in a particular subject and to have shown special aptitude for that subject. Results so far achieved by this system have, we are informed, been most encouraging. The training is undertaken by selected teachers of the various London general hospitals, as well as the army professors at the college.

It is recognized that, apart from purely professional work, officers should receive administrative training, and the inclusion of officers of the Royal Army Medical Corps in the

classes that undergo courses at the recently instituted School of Army Administration at Chisledon will be of great advantage to the Medical Service. Many appointments of an administrative character are open to officers who show zeal and capacity for this side of the army medical officer's duties.

ROYAL AIR FORCE MEDICAL SERVICE.

THE Royal Air Force Medical Service offers a career for medical men which should prove both attractive and interesting. The rates of pay and allowances are good, and a new field of scientific interest is opened up by the manifold problems which the circumstances of aviation produce. The physical and mental fitness for and reaction to the varied conditions under which the flying personnel perform their functions provide much scope for research.

As promotion to the higher ranks of the service is to be entirely by selection, and as a certain proportion of the higher ranks will be reserved for purely scientific as opposed to administrative appointments, it will be seen that there are excellent prospects for the young medical officer who exhibits ability and energy in scientific research, as well as for those who develop a talent for administration.

Commissions.

The establishment will consist partly of permanent and partly of short-service officers.

Short-service officers will be admitted by direct entry for a period of two years, which may be extended to four years at the discretion of the Air Council on recommendation of the Director of Medical Services. Those who are not selected for permanent commissions will pass into the Royal Air Force Medical Reserve at the expiration of their period of service on the active list, and will then receive the gratuity to which their service entitles them. Short service officers who are approved for permanent commissions, but for whom there are not vacancies in the Royal Air Force Medical Service, may under certain conditions transfer to the Royal Army Medical Corps, counting their time served in the Royal Air Force towards increments of pay and retired pay in the Royal Army Medical Corps.

Officers who have been selected for permanent commissions will be granted leave for a period not exceeding nine months for post-graduate study in general medicine and surgery, tropical and preventive medicine, and other special subjects. Such leave will be granted during the first six years of permanent service, and during such leave officers will remain on full pay and allowances.

New entrants into the Royal Air Force Medical Service will be commissioned as Flying Officers (Medical), and will be eligible for promotion to the rank of Flight Lieutenant (Medical) after two years' service. Officers selected for permanent commissions will be promoted to the rank of Squadron Leader after ten years' total service. Accelerated promotion may be carried out, in a limited number of cases, of officers who show exceptional ability after completion of eight years' service. Promotion to the rank of Wing Commander will be by selection at any time after sixteen years' total service, and to that of Group Captain by selection at any time after twenty-two years' service.

There will be no competitive examination on entry; candidates must be under 28 years of age; be nominated by the Dean of a recognized medical school or teaching hospital; and will be interviewed personally by the Director of Medical Services, Royal Air Force, before acceptance. Each candidate must produce:

1. Birth certificate.
2. Medical registration certificate.
3. A declaration containing the following information:
   - (*a*) Age and place of birth.
   - (*b*) That he is of pure European descent and the son of a subject of the British Empire.
   - (*c*) That he labours under no constitutional or mental disease or disability which may interfere with the efficient discharge of the duties of a medical officer in any climate in peace or war.
     (All candidates will be required to pass a medical examination as to their physical fitness before acceptance, to ensure that they fulfil the standard laid down in this declaration.)
   - (*d*) That he is ready to engage for general service at home or abroad as required.
   - (*e*) The qualifications he is possessed of and what medical or other appointments he has held (if any).
   - (*f*) That he is willing to fly whenever called upon to do so, and to qualify in such aviation test as may be required.

If the applicant is in possession of a certificate of training in an Officers' Training Corps this should be submitted.

An applicant who at the time of application holds or is about to hold a resident appointment in a recognized civil hospital may be seconded for the period, not exceeding one year, during which he holds such appointment. Whilst seconded he will not receive pay from Air Council funds, but his seniority will count from the day on which he is seconded to the civil hospital.

Uniform and Equipment.

Medical officers will be required to provide themselves with the uniform of their rank, and with the distinguishing badges of the Royal Air Force Medical Service. They will be required to provide themselves with service dress and mess dress. The provision of full dress is entirely optional.

An outfit allowance of £50 will be granted to officers if they have had no previous commissioned service. If they have had previous commissioned service in the Royal Navy, the Army, or the Royal Marines, but not in the Royal Air Force, they will receive an outfit allowance of £25.

Rates of Pay.

The rates of pay in the Royal Air Force Medical Service are set out in the following tables:

Rank and Years of Service.	Rate per Diem. s.	d.
Flying Officer:		
On joining	24	0
Flight Lieutenant:		
On promotion	26	0
After 2 years in the substantive rank	28	0
,, 4 years ,, ,,	30	0
Squadron Leader:		
On promotion	34	0
After 2 years in the substantive rank	36	0
,, 4 years ,, ,,	38	0
,, 6 years ,, ,,	42	0
Wing Commander:		
On promotion	46	0
After 2 years in the substantive rank	50	0
,, 4 years ,, ,,	52	0
,, 6 years ,, ,,	54	0
Group Captain:		
On promotion	60	0
After 2 years in the substantive rank	64	0
,, 4 years ,, ,,	68	0

Rates of Pay in India.

	Rs. per Mensem.
Flying Officer	650
Flight Lieutenant	750
After 2 years as such	850
,, 4 years ,,	900
Squadron Leader	1,050
After 2 years as such	1,100
,, 4 years ,,	1,150
,, 6 years ,,	1,250
Principal Medical Officer	1,960

The scale of *Retired Pay* for Group Captains and lower ranks is given in the following table:

Age.	Service Counting for Retired Pay.	Rate of Retired Pay.	Addition for each Extra Year of Service.*	Reduction for each Deficient Year of Service.*
		£	£	
55	24	790	22	15
54	24	765	22	15
53	23	742	22	15
52	23	720	22	15
51	22	697	22	15
50	22	675	15	15
49	21	657	15	15
48	21	600	15	15
47	20	562	15	15
46	20	525	15	15
45	19	487	15	15
44	19	450	15	15
43	18	412	15	15
42	18	375	15	15
41	17	337	15	15
40	17	300	15	15

* Limited to five years.

Group Captains retire at 55; maximum retired pay £300
Wing Commanders retire at 51; ,, ,, £650
Squadron Leaders retire at 48; ,, ,, £550

There will be a minimum qualifying period for retired pay of twenty years.

Short-service officers will receive gratuities at the rate of £100 for each of the first two completed years of service, and at the rate of £150 for the third and fourth completed years. (If granted permanent commissions these gratuities will not be payable, but the period of service under the short-service commission will count for retired pay.)

Medical officers holding permanent commissions may, at the discretion of the Air Council, be allowed to withdraw from the service after ten years' service with a gratuity of £1,250, or after sixteen years with a gratuity of £2,000 in lieu of retired pay.

The usual allowances will be payable to medical officers under the same conditions as to officers of other branches of the Royal Air Force.

INDIAN MEDICAL SERVICE.

UNDER the new constitution now being brought into effect in India medicine is a transferred subject—that is to say, it will in future be under the control of the Provincial Governments and legislatures. As at present arranged 305 civil posts are reserved for officers of the Indian Medical Service—namely, 65 under the Government of India and 240 under Local Governments. In the present state of transition the position which the Indian Medical Service will in future occupy is not well defined; it seems unnecessary, therefore, to reproduce here in full the conditions of service. Full details and particulars can, however, be obtained from the Secretary, Military Department, India Office, Whitehall, London, S.W.1.

THE ROYAL NAVAL MEDICAL SERVICE.

A WARNING TO YOUNG MEDICAL MEN.

IN January, 1920, as a consequence of the report of the Jerram-Halsey Committee, new regulations for retirement of officers came into force in the Royal Navy, and new rates of pay were laid down. The new regulations inflicted a great injustice upon a considerable number of surgeon commanders who were nearing, or had passed, the new retiring age. The grievance arose under two heads—age of retirement and rate of pension—and frequent remonstrances were addressed to the Admiralty by the British Medical Association.[1]

Very briefly stated, these medical officers, who had entered the Service on the understanding that they would be allowed to serve until the age of 55, were compulsorily retired at 50, and their maximum pension was fixed at £600 a year, representing an increase of but 10 per cent. on the former retired pay of their rank; it should be particularly observed that officers of other branches got increases of pension varying from 26 to 100 per cent. In reply to representations by the British Medical Association the Admiralty admitted the grievance, but declined to remedy it. The Council of the Association at length warned the Admiralty that if the question could not be settled satisfactorily it would be obliged to place the facts before the profession, and to advise young medical men that if they entered the Royal Naval Medical Service they must do so with the knowledge that, with its present policy, the Admiralty cannot be trusted to keep any engagement it may make with its medical officers. Therefore, bearing in mind the treatment of senior surgeon commanders, the Association's advice to medical students and young practitioners is to consider seriously the disadvantages to which they are liable if they place their careers in the hands of the Admiralty.

It may be hoped that before next year's Educational Number appears the Admiralty will have seen the wisdom of putting itself right in the eyes of the medical profession. If this is done, we shall be able to include once again a statement of the conditions under which commissions are granted in the Medical Department of the Royal Navy, and in other ways give encouragement to prospective candidates.

PRISON MEDICAL SERVICE.

CANDIDATES for the medical staff are approved by the Secretary of State for the Home Office on the recommendation of the Prison Commissioners. The Chairman of the Board is M. L. Waller, Esq., C.B. Application for employment may be made to the Board on a special form, which can be obtained from the Secretary, Prison Commission, Home Office, London, S.W.1.

In the smaller prisons the medical officer is usually a local practitioner, but in the larger the members of the medical staff are required to devote their whole time to the service. In the case of those required to give their whole time to the service the appointment in the first instance is to the post of medical officer Class II, and from the seniors of this rank the medical officers Class I are selected as vacancies occur.

The pay of the whole-time prison medical staff is: Medical officer Class II, £300, rising by annual increments of £15 to £500; medical officer Class I, £550, rising by annual increments of £20 to £700. Unfurnished quarters are provided, or an allowance in lieu is made. The Civil Service bonus is paid on the salary. There are 15 medical officers Class II, 10 medical officers Class I, and 33 part-time medical officers.

The number of vacancies is never large, and promotion is slow. Although there has recently been some improvement in the scale of pay, the remuneration both of whole-time and part-time prison medical officers is unsatisfactory. A Committee is now inquiring into the pay, etc., of prison officers (including medical officers) and its report is expected to be issued this year.

[1] See BRITISH MEDICAL JOURNAL, July 8th, 1922 (p. 52).

MEDICAL PRACTICE IN BRITISH DOMINIONS AND FOREIGN COUNTRIES.

MEDICAL Acts have now been passed in almost all places forming part of the British Empire beyond the seas, and registers of duly qualified practitioners are consequently maintained. To these registers medical men educated in the United Kingdom are always admissible merely on payment of a registration fee, providing they produce evidence that they are of good repute and are either registered or eligible for registration in the United Kingdom, as the local requirement may be. The only exception to this statement that need be made relates to the Dominion of Canada. Each of its provinces acts in medical matters as an independent State. The result has been that reciprocity of practice has been established between this country and all the Provinces of Canada except British Columbia, where certain obstacles still remain to be overcome. We would advise any medical man proposing to practise in Canada first to communicate with the Provincial Registrar, stating what degrees or diplomas he holds, and asking for information as to the precise steps he must take in order to obtain admission to the Provincial Register.

Italy and Japan are the only two foreign States with which complete medical reciprocity has been established, though there are other countries which grant a limited recognition to British qualifications. Generally speaking, in Continental countries (with the exception of the kingdom of Italy) a British medical man desiring to exercise his profession therein must pass practically the same examinations as those imposed on natives of the country. The same observation applies to all foreign States in the South American continent. Each of the United States of North America has its own laws and regulations governing medical practice; some of the States admit any holder of a degree or diploma to their Register, but the majority require a candidate for registration to submit to an examination.

A pamphlet showing the conditions under which medical and dental practitioners legally qualified in their own country may practise abroad can be obtained from the office of the General Medical Council, 44, Hallam Street, Portland Place, London, W.1, price 2s. 6d., or 2s. 9d. post free in the United Kingdom. Practitioners who think of going abroad to practise will find therein much useful information, including the name of the official in each country to whom requests for further particulars should be addressed. The last edition was published in January, 1921.

MEDICAL APPOINTMENTS UNDER THE COLONIAL OFFICE.

APPOINTMENTS to the Medical Services of the Colonies and Protectorates under the administrative control of the Colonial Office are made by the Secretary of State for the Colonies. Such appointments are to the service of a given colony or colonies, for there is no unified service directly administered from the Colonial Office. It follows that conditions of service and superannuation are in the main determined by the economic resources and general public health policy of the individual colony and its local government, and vary almost as widely as do conditions of climate. Moreover, the extent of the control exercised by the Colonial Office varies according to the constitutional status of the particular colony, and the detailed information available centrally is not always complete. The intending candidate, therefore, should make comprehensive inquiries as to local conditions before applying for an appointment, and will do well to supplement official information by reference to the central office of the British Medical Association, where reports obtained from time to time from the local Branches are available. This is the more necessary

because facilities for transfer from the medical service of one colony or group of colonies to that of another are as yet practically non-existent, except in connexion with a few specialist and senior appointments; this sets strict limits upon the opportunities for promotion.

The bulk of the medical appointments made by the Secretary of State in this country are to the services in the East and West African Colonies and Protectorates, the Straits Settlements and Malay States, the East Indies, and Fiji and the Western Pacific. In general, candidates for such appointments must be between the ages of 23 and 35; and whilst these limits are not for the moment absolute, an officer over 35 years of age on first appointment may be required to serve on a temporary and non-pensionable footing; regular appointments are, subject to a varying period of probation, for the most part, nominally at least, permanent and pensionable. There is no entrance examination, but practitioners selected for appointment must obtain a certificate of physical fitness from one of the Medical Advisers of the Colonial Office. In the case of the West African Medical Staff and the East African Services successful candidates are required to undergo an approved course of instruction in tropical medicine.

Colonial Service: The General Outlook.

While colonial service offers undoubted attractions to some practitioners it also presents very definite disadvantages, and not the least of these is, at the present time, uncertainty as to the future. Before the war, conditions in several of the services gave rise to considerable anxiety; the greatly enhanced cost of living during the war resulted in certain more or less inadequate temporary advances in remuneration, but consideration of the radical reforms required was postponed until the succeeding period of reconstruction. In 1919 a Departmental Committee under the Chairmanship of Sir Walter Egerton was appointed to consider the position of the Services generally, the means of securing contentment within them, and the maintenance and increase of the supply of candidates. The Committee found that the ideal to be aimed at was the creation of a unified Colonial Service, recruited by competitive examination and represented on the staff of the Colonial Office by a Medical Director-General. As an immediately practicable step in this direction it recommended the assimilation of the medical services in neighbouring colonies, and more especially those in the East African and Malayan groups. A permanent increase of salaries with a general minimum of not less than £600 a year on first appointment was recommended; the necessity for study leave was recognized, as was the need for the development of facilities for research; an increase in the number of specialist appointments and adequate provision for promotion by transfer from the service of one colony or group to that of another were other points emphasized.

Progress along the lines laid down by the Departmental Committee, which correspond broadly to the policy adopted by the British Medical Association, has undoubtedly been made since the report of the Committee was issued. With the exception of the West Indian Services, the Fiji and Pacific Colonies, and a few of the smaller dependencies which each offer only one or two medical appointments, the adoption of the £600 minimum or its equivalent in local coinage has been achieved. The commencing pay in the West African Medical Staff is £660 a year. For all practical purposes the Services in the Malay Peninsula have been unified, and some steps have been taken towards the assimilation of the East African Services, whilst there has been an appreciable increase in the number of specialist appointments and the facilities for research. The Services, however, remain understaffed. Opportunities for promotion, failing means of transfer from one service to another without loss of pension, must remain inadequate. Certain services, notably those in the West Indies and Fiji, have not yet secured that measure of reform essential to a minimal standard of efficiency, and it seems clear that the final unification of the East African Medical Services under conditions approximating to those of the West African Medical Staff will be indefinitely postponed.

Moreover, the acute economic depression of the last three years has affected many of the colonies with almost crushing severity. It has in some cases brought about the indefinite postponement of projected reform, and in others it has practically neutralized advances in remuneration that were at one time thought to be permanent, besides imposing disastrous restrictions on the public health programme in many places, and reductions in the medical personnel of the Services. Nor do economic difficulties, radical though they are, stand alone. The constitutional status of the colonies is under review. Schemes for regrouping and for the concession of greater local autonomy may be temporarily delayed pending economic recovery, but it is not unreasonable to suppose that until such questions are settled there can be little progress towards the unification of the Colonial Medical Service. Their adoption, on the other hand, may entail the formulation of a new solution for the admitted difficulties.

The condition of the Colonial Medical Services has for some time been a matter of the gravest concern to the British Medical Association, which gave evidence on the subject before the Egerton Committee, and has been in constant communication with the Colonial Office on matters touching their welfare since August, 1921. During this period the Association has, in effect, been recognized as the mouthpiece of the Services, and has received copies of all official documents primarily affecting medical officers, and also the gazettes of the various local Governments. It has therefore been possible to supplement the activities of the Overseas Branches by the exercise centrally of unceasing vigilance over all tendencies likely to affect the development of the Colonial Services. It cannot be too strongly emphasized, however, that present conditions render advance impracticable.

The future is extremely uncertain, and after twelve months in which there has been no material advance worthy of record we must again warn intending candidates to consider carefully whether they may not be well advised to look elsewhere than to the Colonial Medical Services for a career.

Kenya Colony and the Windward Isles.

The necessity for caution is not diminished by the action of the Secretary of State for the Colonies in connexion with the recent reduction of personnel in the Kenya Colony Medical Service. The ruling in this case, discussed in detail in the BRITISH MEDICAL JOURNAL of April 21st last, by which two established members of the service were compulsorily retired without compensation beyond the award of the pension payable after the same period of service, in the event of retirement on grounds of ill health, has made it plain that colonial appointments officially scheduled as permanent and pensionable do not, as a matter of fact, afford security of tenure. Doubtful as the general outlook is, it is bright in comparison with the conditions now obtaining in the Windward Islands, where three years of unremitting effort on the part of the British Medical Association, both centrally and locally, have ended in failure. The Representative Body of the Association, after full consideration of the facts of the case, and with a due sense of the responsibility involved in any action tending to hinder the supply of qualified candidates for the services in these islands, passed at Portsmouth last July a resolution regretting that the Colonial Office had declined to press the claims of the Windward Islands Medical Officers with regard to their terms and conditions of service, and thoroughly endorsing the action taken by the Council in support of those claims. Such a resolution is the best possible commentary upon the opinion already expressed in these columns (June 30th, 1923, p. 1102), that no qualified medical practitioner aware of the conditions of service will accept an appointment in these islands.

Official Sources of Information.

All inquiries in connexion with colonial medical appointments made by the Secretary of State for the Colonies should be addressed to the Assistant Private Secretary (Appointments), Colonial Office, Downing Street, S.W.1. Any vacancies occurring in Iraq, Palestine, and Aden are recruited through the Colonial Office, and information can be obtained at the same address. Vacancies also occur, though at rare intervals, in the Sudan, and inquiries as to these should be addressed direct to the Civil Secretary, Sudan Government, Khartoum. Inquiries about any medical appointments made by the Egyptian Government should be addressed to the Director-General, Public Health Department, Cairo.

Information as to medical appointments in the self-governing Dominions and their dependencies can be obtained on application to the High Commissioners or Agents-General for the Dominions. Intending applicants are also recommended to

consult the Colonial Office List and the Professional Handbook (price 6d.) issued by the Overseas Settlement Office, 6, St. James's Square, S.W.1.

There remain a number of medical appointments made by mining companies and other commercial undertakings in various parts of the tropics. Much caution should be exercised in accepting such posts, and the form of contract should be subjected to very careful scrutiny. Advice in this connexion should always be sought at the central office of the British Medical Association, 429, Strand, W.C.2.

MEDICAL RADIOLOGY AND ELECTROLOGY.

The Cambridge Diploma.

A Diploma in Medical Radiology and Electrology is granted by the University of Cambridge. The primary object is to provide adequate training in a branch of medical work which is becoming increasingly important and difficult, and which is outside the ordinary medical curriculum. The Diploma is only open to those who hold a medical qualification, and includes a course of lectures and practical work in Physics (Part I) and in Radiology and Electrology (Part II). Attendance at the necessary courses of lectures in both subjects, and in addition six months' clinical experience in an adequately equipped hospital recognized by the Committee, is essential. The whole course of study takes six months, the lectures, practical work, and hospital attendance running concurrently.

The courses carried out by the University of Cambridge are at present arranged to begin early in January. Three months are spent in Cambridge doing the lectures and practical work in Part I, and attending the systematic lectures in Part II and the practice of Addenbrooke's Hospital, where there is a fully equipped and up-to-date X-ray and Electrological Department. The remaining three months can be completed at any recognized hospital, but special arrangements are made for students to continue their studies in London, where demonstrations at various hospitals are arranged, in order to give a wide experience.

In addition, an independent course is arranged by the British Association of Radiology and Physiotherapy. This course is held entirely in London, but is recognized by the University as qualifying for the examination; it begins early in October.

Further particulars as to the Cambridge Course can be obtained from F. Shillington Scales, M.A., M.D., Medical Schools, Cambridge, and of the London Courses from Stanley Melville, M.D., at the offices of the British Association of Radiology and Physiotherapy, 12, Stratford Place, London, W.1.

MEDICAL MISSIONARIES.

Missionary Societies are in constant need of qualified men and women to fill vacancies as they occur in their hospitals, and also to enable them to take advantage of fresh openings. To those suitably endowed the mission field offers unique opportunities for interesting work, and the development of native medical schools, as training institutions in connexion with some of the larger mission hospitals, affords excellent scope for valuable work to medical men and women who are qualified to teach. It is not usually expected that medical missionaries should take a position such as would otherwise be occupied by an ordained clergyman or minister, but it is essential that they should be prepared to exert their influence in any hospital to which they may be sent so that a Christian atmosphere may be maintained and the work of evangelization be carried on through the ministry of healing.

As for scientific and other qualifications for the work, medical missionaries, in addition to being physically capable of sustaining a life which makes a great demand upon their strength, should be thoroughly well trained physicians and surgeons. It is very desirable that they should have held a resident appointment at a general hospital, and have a good knowledge of practical surgery, gynaecology, tropical medicine, and the treatment of eye diseases. Useful information can be obtained from the Secretaries of the various Missionary Societies, or from Thomas Cochrane, M.B., C.M., Honorary Secretary, British Advisory Board on Medical Missions, 3, Tudor Street, London, E.C.4.

Dental Surgery.

Until the passing of the Dentists Act, 1921, the profession of dentistry in this country was regulated by enactments very closely similar to those relating to the practice of medicine—that is to say, there was no direct prohibition of the act of practice; and the Dentists Act of 1878 gave the same degree of protection to legally qualified and registered dentists as was accorded to registered medical practitioners—namely, the reservation of the use of certain titles. This Act also provided (1) that no person should take or use the name or title of "dentist" (either alone or in combination with any other word or words) or of "dental practitioner," or any other name, title, or description expressed in words or by letters implying that he was specially qualified to practise dentistry, unless he was registered, under a penalty of £20; and (2) that an unregistered person could not recover any fee or charge in respect of any dental operation, attendance, or advice. But, in the case of the practice of medicine by unqualified and unregistered persons, certain deterrent factors came into play—such as the inability to give a death certificate—and these did not operate to the same extent in the case of dentistry; hence, unqualified practice has been far more prevalent in dentistry than in medicine, and this increased after a decision of the House of Lords placing a narrow interpretation upon the words "specially qualified to practise dentistry," by defining the word "qualified" as not referring to competence but to the possession of a recognized diploma.

The Dentists Act, 1921.

This unsatisfactory position has now been remedied by the passing into law of the Dentists Act, 1921; its provisions are based largely on the recommendations of a Departmental Committee appointed in 1917 by the Privy Council "to investigate the extent and gravity of the evils connected with the practice of dentistry and dental surgery by persons not qualified under the Dentists Act." Since November 30th, 1922, no person has been permitted by law to practise or hold himself out, whether directly or by implication, as practising or as being prepared to practise dentistry unless he is on the *Dentists Register* provided for by the Dentists Act, 1878. The practice of dentistry is defined as including "the performance of any such operation and the giving of any such treatment, advice, or attendance, as is usually performed or given by dentists," and the performing of any operation or the giving of any "treatment, advice, or attendance on or to any person as preparatory to or for the purpose of or in connexion with the fitting, insertion, or fixing of artificial teeth." The maximum penalty incurred by an unregistered dentist is £100 for each offence. There are, however, certain important exceptions to the requirement of registration. A registered medical practitioner may practise dentistry without being on the *Dentists Register*, and a registered pharmaceutical chemist or chemist and druggist may extract a tooth where the case is urgent and where no doctor or dentist is available, but the operation must be performed without any kind of anaesthetic; further, any person may carry out minor dental work in a public dental service under the personal supervision of a registered dentist provided it is in accordance with conditions approved by the Minister of Health after consultation with the Dental Board.

Certain persons other than those qualified by examination were entitled to be registered under the new Act. They had to be of good personal character and 23 years of age before July 28th, 192[illegible] (the commencement of the Act), and to have been engaged for five of the seven years preceding that date as their principal means of livelihood in the practice of dentistry in the British Islands, or have been admitted to membership of the Incorporated Dental Society not less than one year before the commencement of the Act. The passing of "the prescribed examination in Dentistry" within two years of the commencement of the Act is considered as equivalent to practising for five years, and a registered pharmaceutical chemist or a chemist and druggist who immediately before the commencement of the Act had a substantial practice as a dentist, including all dental operations, was treated as though he had practised for five years. A dental mechanic who for the five years has been carrying on work as such can be registered provided within ten years of the commencement of the Act he passed the prescribed examination.

Dentistry may be carried on by a corporate body provided

majority of the directors and all the operating staff are registered dentists, and that no other business than dentistry or only some business ancillary to dentistry is carried on by the company. Companies carrying on the business of dentistry at the present time are permitted to continue to do so with certain restrictions, provided that the names of the directors have been entered in a list kept by the registrar for the purpose. Every director or manager of a company convicted of an offence under the Act will be held to be guilty of the offence unless he proves that the offence was committed without his knowledge, and the court may, in addition to a fine, order that the name of any director convicted shall be removed from the list of directors aforesaid.

THE DENTAL BOARD.

The Dental Board of the United Kingdom has been established for the purpose of administering the new Act. The first members hold office for three years, subsequent members for five years. The Privy Council has appointed the chairman and two members, the latter being dentists not registered under the principal Act. The General Medical Council has appointed three members, who must be members of the Branch Council for England, Scotland, and Ireland respectively. Three persons who are neither medical practitioners nor dentists represent England, Scotland, and Ireland, and four registered and qualified dentists have been appointed—two by the Minister of Health, one by the Scottish Board of Health, and one by the Lord Lieutenant of Ireland. At the end of three years the two members being dentists not registered under the principal Act, and the four members registered under that Act appointed by the Minister of Health (two), the Scottish Board of Health, and the Lord Lieutenant of Ireland, will be replaced by four members who will be elected by qualified dentists practising in the three countries and two by registered dentists who are not qualified.

On the establishment of the Dental Board in 1921 certain powers and duties of the General Medical Council were transferred to it, including the duty of erasing from the *Dentists Register* any entry which has been incorrectly or fraudulently made. An inquiry into the case of a person alleged to be liable to have his name erased from the *Register* will be made by the Board, which will report its finding to the General Medical Council, the order directing the erasure being made, as at present, by the Council. A name erased from the *Register* can only be restored by the Council upon a report made by the Board. An appeal to the High Court may be made by any person aggrieved either by refusal of the Board to register his name or by the removal of his name from the *Register*. The first registrar was appointed by the General Medical Council with the approval of the Privy Council, and he holds office for three years; subsequent appointments will be made by the Board. The administrative expenses of the Board are defrayed from the registration fees and annual retention fees, but any surplus may be allocated to purposes connected with dental education and research or to any public purpose connected with dentistry. The office of the Dental Board is at 44, Hallam Street, London, W.1.

The *Dentists Register* for 1923 contains the names of 12,762 persons, of whom less than a half are registered with qualifications, 7,269 names having been registered under the Dentists Act, 1921.

DENTAL EDUCATION AND EXAMINATION.

The preliminary examination in Arts is the same for medical and dental students, and the early stages of their education embrace much the same subjects[1]; and, as the dental student is required to obtain a knowledge of the broad principles of medicine and surgery, it is necessary for him to pursue some portion of his studies at a medical school as well as at a special dental school, the latter not undertaking the teaching of these subjects. Registration as a dental student is not in all cases compulsory, though it is to be advised as convenient as affording proof of the commencement of professional education, and it is required by most of the licensing bodies, all of whom insist upon a curriculum covering four academic years.

Qualifying licences are granted by the Royal Colleges of Surgeons of England and of Edinburgh and of Ireland; by the Royal Faculty of Physicians and Surgeons, Glasgow; and by certain of the universities in the United Kingdom.

[1] See the Registrar's Memorandum, printed in the article on the General Medical Council at page 356.

Recognized dental schools are numerous. In London there are those connected with the Royal Dental Hospital, Leicester Square; the National Dental Hospital (now the University College Hospital Dental School), Great Portland Street; Guy's Hospital; and the London Hospital. In the provinces there are the Birmingham Dental Hospital; the Royal Infirmary and the General Hospital, Bristol; the Dental Hospital and the Public Dispensary, Leeds; the Dental Hospital, Liverpool; the Dental Hospital, Manchester; the Dental Hospital and School, Newcastle-on-Tyne; the Royal Hospital, Sheffield. In Scotland there are the Dental Hospital, Dundee; the Incorporated Dental Hospital and School, Edinburgh; and the Incorporated Dental Hospital, Glasgow; and in Ireland, the Incorporated Dental Hospital of Ireland and the Royal College of Surgeons in Ireland.

Study may also be commenced in the dental department of any university of the United Kingdom. The universities mentioned in the current issue of the *Medical Directory* as possessing dental schools or departments are: Birmingham, Leeds, Liverpool, Manchester, and Sheffield.

There are considerable variations in the order in which the different licensing bodies require the various subjects of the curriculum to be taken up, and every prospective dental student should study not only the regulations of the General Medical Council but also those of the body whose licence he hopes to obtain. This is the more important as in the case of some licensing bodies changes in the curriculum, with the view of making it more closely adapted to the needs of the practising dentist, have either already been made or are in contemplation.

Recommendations of the General Medical Council.

The Dentists Act still leaves to the General Medical Council the duty of controlling the course of study and examinations required for dental qualifications.

The following recommendations as to the course of study and examinations to be required of candidates for degrees or licences in dentistry or dental surgery were adopted by the Council on May 27th, 1922.

Preliminary Examination and Registration.

1. That every dental student shall, at the commencement of his studentship, be registered in the manner and under the conditions prescribed for medical students.

2. That before registration in the *Dental Students Register* every applicant shall be required to have passed, in addition to the examination in general education, which shall be the same as that required for medical students, an examination in Elementary Physics and Elementary Chemistry, conducted or recognized by one of the licensing bodies, which shall also be the same as that required for medical students.

3. That before registration as a dental student every applicant shall produce evidence that he has attained the age of 17 years.

Professional Study.

4. That every candidate for a degree or licence in dentistry or dental surgery shall be required before admission to the final or qualifying examination to produce certificates showing:

(i) That he is at least 21 years of age.

(ii) That he has been registered as a dental student.

(iii) That he has, subsequently to the date of registration as a dental student, been engaged in professional study for at least four years, of which three years at least shall be spent at a school or schools recognized for professional study by one of the licensing bodies.

(iv) That, subsequently to the date of registration as a dental student, he has attended at a recognized medical school courses of instruction, which shall be the same as those required for medical students, in the following subjects: (*a*) Chemistry, and (*b*) Physics, in their application to Medicine; (*c*) Elementary Biology. That he has attended at a recognized medical school courses of instruction in the following subjects: (*d*) Human Anatomy (with dissections and demonstrations) for three academic terms; (*e*) Physiology (with laboratory instruction, including practical Histology) for two academic terms; (*f*) General Pathology (including Bacteriology) for two academic terms; (*g*) Medicine for two academic terms; (*h*) Surgery for two academic terms; (*i*) the practice of a recognized general hospital or hospitals of not less than eighty beds, with certified instruction in Clinical Medicine and Clinical Surgery, for four academic terms.

(v) That he has attended at a recognized dental school courses of instruction in the following special subjects: (*a*) Dental Anatomy and Physiology, human and comparative. The course should comprise a minimum of twenty meetings of the class. (*b*) Practical Dental Histology and Morbid Histology. The course should comprise a minimum of sixteen meetings of the class. (*c*) Dental Pathology and Surgery. The course should comprise a minimum of twenty meetings of the class. (*d*) Dental Materia Medica and Therapeutics. The

course should comprise a minimum of sixteen meetings of the class. (*e*) Dental Metallurgy (with practical work and demonstrations). The course should comprise a minimum of twenty meetings of the class. (*f*) Dental Mechanics (with practical work and demonstrations). The course should comprise a minimum of twenty meetings and twenty demonstrations. (*g*) A course of instruction in the use of Anaesthetics, general and local, employed in Dental Practice. (*h*) A course of instruction in Radiology as applied to Dentistry.

(vi) That he has for at least twenty-four calendar months attended, during the ordinary academic terms, the practice of a recognized dental hospital or of the recognized dental department of a general hospital.

(vii) That he has received for not less than twenty-four calendar months, or for 2,000 hours, practical instruction in dental mechanics.

5. That the examination for a degree or licence in dentistry or dental surgery shall be partly written, partly oral, and partly practical, and shall include the following subjects: (*a*) Chemistry, Physics, and Biology, in their bearing on Medicine and Dentistry. (*b*) Human Anatomy and Physiology. (*c*) General Pathology, including Bacteriology. (*d*) Medicine and Surgery. (*e*) Dental Anatomy and Physiology, Dental Pathology, Dental Surgery (including Orthodontics), Dental Materia Medica and Therapeutics, and Dental Mechanics and Dental Metallurgy. (*f*) Practical Examination in Dental Surgery. (*g*) Practical Examination in Dental Mechanics and Metallurgy. (*h*) Anaesthetics, general and local, employed in Dental Practice.

6. That the prescribed subjects of examination may be combined or distributed at the discretion of the licensing bodies, and may be taken at two or more successive stages during the course of professional study; provided that no candidate shall be admitted to any final examination in Dental Surgery and Dental Mechanics until he shall have completed the required four years' course of study.

The British Medical Association:

ITS AIMS, WORK, AND CONSTITUTION.

THE British Medical Association (as briefly stated at the close of our introductory article on the Profession of Medicine) was founded in 1832 to promote the medical and allied sciences, to maintain the honour and interests of the profession, and foster a feeling of friendship among its members. To attain these objects it holds periodical meetings for the discussion both of medical and scientific subjects, and of professional affairs; it publishes the *British Medical Journal;* it maintains a reference and lending library; it has instituted lectures, scholarships, and grants for research work; and does an immense amount of work on behalf of practitioners. The British Medical Association, with a membership of more than 25,600, is the oldest, largest, and most powerful British organization devoted to the welfare of the medical profession. It has recently acquired a fine building in Bloomsbury for its headquarters, providing ample accommodation for immediate needs and space for future developments. The remarkable growth in the central work of the Association during recent years has far outstripped the capacity of the present premises at 429, Strand. An account of the steps taken to acquire, on most advantageous terms, the handsome building designed by Sir Edwin Lutyens, R.A., was given in our issue of July 7th, 1923, at pages 28 and 33.

Constitution and Administration.

The Association has Branches and Divisions throughout Great Britain and Ireland, and also in the Dominions, Colonies, and Dependencies. The Divisions are arranged territorially, and number, in all, 277. For certain purposes of administration or of scientific and clinical work, the Divisions are combined into 93 Branches. Members of Divisions elect Representatives on the Branch Councils and also a member or members of the Representative Body, which is the governing body of the Association and determines its policy.

The Council is the executive of the Association. It is elected partly by the Divisions and Branches and partly by the Representative Body, and includes representatives of the Navy, Air Force, Army, and Indian Medical services elected by the Representative Body. The Representative Body and Council elect standing Committees to take charge of different subjects. Among these may be mentioned the Science, Medico-Political, Ethical, Hospitals, Public Health, and Naval and Military Committees. There are Committees also for the Dominions, Scotland, Ireland, and Wales; and for the working machinery of the Association, such as the Organization, Finance, and Journal Committees. The Insurance Acts Committee, elected partly by the Association and partly by insurance medical practitioners, is financed by the Association; it is the recognized executive and mouthpiece of the insurance practitioners of Great Britain.

Privileges of Members.

A member of the British Medical Association has the right—

1. To attend the annual and other general meetings of the Association and the meetings of the Division and Branch to which he or she belongs.
2. To take part by personal vote (or in some Divisions by voting paper) in the election of the representative of his or her Division in the Representative Body, and also in the election of members of the Council.
3. To receive by post the *British Medical Journal*, published weekly, which gives a full record, with commentary, of progress in clinical and scientific medicine, and of medico-political affairs throughout the British Empire.
4. To receive the help and advice of the central office in any professional difficulty.
5. To use the library as a reading room, and to borrow current medical or scientific books on payment of postage. Besides modern works and periodical medical literature—foreign as well as English—the library contains many books of historic interest.

The full benefits of the Association can only be secured by the co-operation of large numbers of the medical profession, who by their annual subscriptions provide the necessary funds. The greater the membership and the funds the more efficient and influential the organization. The Association during the past ninety years has been the direct means of benefiting every class of medical men and medical women. In asking for new members it looks not only to the older practitioners but also and especially to those recently qualified. To these a generous concession is made as regards subscription, and there is a special claim to their recognition of the work of the British Medical Association in improving the conditions under which they may hold appointments in the public services or in civil life. The Association's work for the Services is well known. It considers itself to be in a special sense the guardian of the interests of those members of the profession who by reason of their position are precluded from taking common action. At the present time, when nearly all the Imperial services are being cut down both in numbers and in remuneration, it is ordinary prudence for every medical officer to join his professional organization.

Subscriptions and Applications for Membership.

The ordinary subscription to the British Medical Association is 3 guineas a year for members resident in the United Kingdom, but this is subject to various exceptions. Thus, newly qualified practitioners elected within two years of registration pay half this sum up to the end of the fourth year after registration; medical officers on the active list of the R.N., R.A.F., R.A.M.C. (Regular), and I.M.S. pay 2 guineas; concessions are made also to members (in the British Isles) of forty years' standing, to members of ten years' standing who have retired from practice, to medical married couples residing together, and to whole-time teachers and research workers. The ordinary subscription for members living abroad is 1½ guineas, but some Branches have special local subscriptions. A member elected after June 30th in any year pays for that year one-half the current annual subscription.

All duly qualified British medical practitioners are eligible for election as members. Full particulars can be obtained on application to the Medical Secretary, British Medical Association Building, 429, Strand, London, W.C.2; the Scottish Medical Secretary, 19, Rutland Square, Edinburgh; or the Irish Medical Secretary, 16, South Frederick Street, Dublin.

[*The present issue being the Annual Educational Number, all current material is held over, and neither the "Supplement" nor the "Epitome of Current Medical Literature" is published this week.*]